CCGB Meeting Agenda, October 23, 2009

1. Approval of minutes
2. Undergraduate announcements
3. 2008-2009 Committee Reports
4. Communications in Engineering (CE) as a separate liberal studies category (Philpot)
5. Discussion of ENGRG 1050, requested by the Dean (Gries)
6. Independent Major

CCGB Minutes, October 9, 2009

Ex-Officio: K. Dimiduk, B. East, L. Schneider, M. Spencer
Other: B. Howland, M. Hutson, C. Pakkala

Approval of Minutes: The minutes of the 9/4/09 CCGB Meeting were approved as written.

Undergraduate Announcements: M. Spencer stated that two hosting programs will take place 10/16-10/18. The URM hosting program begins on 10/16, and the Women in Engineering Day will be on 10/17. We are expecting about 130 students to come to both programs. Some 80-90% of the attendees typically end up applying for admission to Cornell.

Honors Program revisions in EP, CS and ISST: D. Gries stated that the Honors Program should consist of 9 credits beyond the minimum needed for graduation. Some programs didn’t list the 9 credit requirement. The ISST Honors Program hasn’t been formally approved yet. L. Pollack said that the credit requirement has been changed for the EP students and it will be effective with the class that enters in Fall 2010. Vote to approve the Honors Program revisions: Approved unanimously.

Thermo in Physics 2213: L. Pollack stated that Physics 2213 is much too crowded according to the instructor. He wants to explore the possibility of removing thermodynamics from Physics 2213. Thermo is currently covered only for 2 weeks in the course, which is not enough time to do justice to the topic. However, removing it from 2213 would remove thermo from the Common Curriculum. In 1995 it was decided that thermo should be in the curriculum. The instructor wants an answer from us as to whether it can be eliminated. Physics 2213 is electricity and magnetism. Physics 2214 is waves and optics, which isn’t required by all of the majors. There is plenty of material in Physics 2213 without thermodynamics.

A. Zehnder asked if the AEP students would have seen thermo in high school. L. Pollack replied that she doesn’t know. If we remove thermo from the Common Curriculum, we could potentially graduate students who don’t know what entropy is. L. Lee asked if the instructor (P. Krasicky) has a proposal for where thermo should go. L. Pollack replied that his first proposal was that it should just be dropped. Then he figured that maybe it could be in Physics 2214. There was a thought of putting it in CHEM 2090.

S. Baker said that the thermo problem has been discussed many times. There is no comfortable place to put it; it will always be an add-on. CHEM 2090 is a logical place to put it. This was included in the NSF proposal for a pilot alternative to 2090, and we will hear from NSF about the proposal in November. A chemistry course should be dealing with thermo. Everyone does need thermo. L. Pollack said that she thinks chemistry would be a good place for thermo, but she is not sure how open the CHEM 2090 people would be with this. A. Zehnder said that dropping thermo would be fine by MAE/TAM. Lot of majors have some thermo associated with a course, but not all of them. Eliminating thermo would impact the general engineering students.

B. East asked if this topic is worth approaching the Chemistry Department. D. Gries replied that the Chem/Bio Subcommittee should talk to Chemistry about this. S. Baker said that the NSF proposal is to create a chemistry course and offer it to a subset of engineering students. He tried to engage Chemistry about the course and has had bipolar discussions with them. They want to know what we want in the course, but when we tell them, they say they can’t change anything due to the labs. They are constrained by their labs. Thermo is too important to not have it somewhere in the Common Curriculum. It should stay in Physics for now. B. East asked if we should ap-
proach Chemistry about the possibility of including it without a full proposal. S. Baker said that he hopes to re-
approach Chemistry in the spring. He wants to take data from CHEM 2090 to engage them in a process to better 
integrate topics in the course. L. Pollack stated that she will tell P. Krasicky to continue teaching thermo and that 
something different will hopefully be done in the future.

**Report on class sizes and managing courses:** D. Gries said that C. Ober has been pushing the directors and 
chairs to figure out how to merge courses, etc. They have had 3 meetings so far, and nobody was ready to look in 
detail at class sizes and decide how to merge any courses. We don’t know yet which faculty members will be 
leaving, and nobody is ready to merge courses until the need is really there.

B. East said that she hears that departments aren’t able to teach as many graduate courses as they would like. If 
greater efficiency was utilized in the undergraduate curriculum, maybe an additional graduate course could be 
taught. L. Pollack said that she discovered that even though courses might have the same title and look the same, 
each department puts their own flavor on them. She is afraid that we’ll eventually end up with one engineering 
major. We will lose a lot of the uniqueness of each major by merging courses. Almost all the AEP courses are 
core courses. B. East suggested that there may be other departments with courses not as specific as AEP.

S. Baker said that the difference in flavor is slight in many courses compared to the core. It is a fundamental struc-
tural problem that as long as competition for resources exists, units will not agree on how courses should be 
merged and taught. As long as everyone is acknowledged for their contributions, you can’t negotiate how to allo-
crate credits, TAs, budgets, faculty lines, etc. Currently there is no mechanism to merge courses. W. Philpot said 
that the courses that are most likely to be shared are already large courses. We should be able to share thermody-
namics; we have 3 courses that address that, and they are all large courses. A. Zehnder said that the advantages of 
merging courses would be bearable. Every undergraduate course in MAE is already large. MAE is looking at the 
graduate program and keeping it good by keeping up alliances with other departments. D. Gries stated that, in 
summary, not too much is happening regarding merging courses.

**2008-2009 Committee Reports:** S. Baker said that last year J. Engstrom was chair of the Chem/Bio Subcommit-
tee. K. Dimiduk said that the issue with reducing sections in CHEM 2090 seems ironed out for next year. Chemi-
stry moved some CHEM 2070 sections into CHEM 2090. B. East added that it took a lot of work on the part of 
the Advising Office to narrow down the students who needed CHEM 2090 to meet Chemistry’s limit for this fall. 
Chemistry will likely want to cut sections next fall. The enrollment issue doesn’t seem to be smoothed out yet and 
is not going away. K. Dimiduk suggested that if Chemistry disconnected the lab and lecture, it would allow more 
students to take the lecture in fall and the lab in a later semester. She is not sure that Chemistry would want to do 
this. L. Pollack said that it would be better for students to take Physics 1112 with Math 1910 and split the fresh-
man class to avoid a huge enrollment in CHEM 2090 in the fall. The Physics Department says it is fine to take 
Physics 1112 and Math 1910 together, but we need to enforce the prerequisites. The Physics Department has dif-
ferent prerequisites than AEP. Their students are more mathematically strong. She has been working with the 
Physics representative on this. Physics doesn’t require chemistry; they only have 3 semesters of science in the 
first 2 years. M. Hutson said that the performance of students that needed two sciences will need to be evaluated 
in the spring. The students were forced into a position of taking two sciences in the spring due to the Chemistry 
situation. K. Dimiduk said that separating the lecture from lab creates fewer problems than pushing students’ pro-
grams around. B. East stated that Chemistry needs to continue to provide enough slots for our students. L. Pollack 
said that she thinks a lot of students could handle taking Physics 1112 with Math 1910. This is more manageable 
than separating the Chemistry lecture and lab.

B. Howland said that she and F. Shumway met with Ron Hoy to discuss the Bio 101-104 sequence. This sequence 
won’t exist in Fall 2010, and instead Biology will offer 3 choice courses to replace the sequence of lectures and 1 
independent lab. Physio, cell and ecology will be the 3 choice courses and carry 3 credits each. Cell biology and 
ecology will pilot this spring, and there will be a full range of choice classes in the fall. The changes are being 
made with the traditional sophomore level classes also. Hopefully R. Hoy can come to the CCGB and explain this 
in the future. K. Dimiduk stated that she feels this introductory biology is open for discussion. She is applying for 
a grant for special courses for engineers. There is money in the proposal for developing a bio course for engineers. 
S. Baker said that there are two topics the Chem/Bio Committee is pursuing: chemistry for engineers and biology 
for engineers. There are no easy solutions here. We want an introductory biology course taken by engineers, but
nobody could agree on what the curriculum should be. He wondered whether incorporating biology into the curriculum is a goal for the college.

L. Pollack said that AEP teaches a biology class for engineers; it is mostly thermodynamics. S. Baker stated that different groups in engineering look at different things and consider different things important. If this group can define clear boundary conditions for the Chem/Bio Committee, that would be good. W. Philpot wondered if biology needs are different among engineering departments. S. Baker replied that different disciplines place different values on different topics. There will be almost no overlap in some majors. We should step back and teach a spectrum of topics. A. Zehnder said that if biology is taught too broadly, it might look like a high school course. L. Pollack said that we would need to inject engineering into it. Without the support of BME, this topic won’t go anywhere in the college.

A. Zehnder stated that there is a serious discussion about small section calculus is on the horizon. It will likely be the end of small section calculus for Math 1920 in the fall. It is up in the air for Math 1910. In the end, they are Math Department classes, and Math chooses what happens with them. Small sections are 30-35 students and meet 3 times a week with 2 recitation sections. The Math Department wants Math 1920 divided into 4 lectures of about 100 students. There is a parallel sequence in calculus. They want to move Math 1120 into large lectures. Math is looking at keeping small sections in Math 1110 and hopefully Math 1910. D. Gries said that he chatted with the Math Chair. They want to change to 4 sections due to finances. A. Zehnder said that the full cost of teaching the courses includes faculty and supplemental resources. The Math Department has hired lots of visiting assistant professors, which is good in many ways but leaves them vulnerable in other ways. L. Pollack said that the Biology Department teaches with some undergraduate seniors who can earn credit by TAing in courses.

A. Zehnder said that the workshops in Math 1910 got off to a rocky start. Hopefully now that they are in their third year, they are going better. L. Schneider asked if there had been a discussion about reducing recitation sessions. A. Zehnder replied that the Math Department had talked about reducing recitation sessions to 1 per week, but that would save very little TA time. It would also knock the workshops out of alignment. S. Baker said that most of the commonly accepted wisdom about class size is wrong. There is almost no correlation between class size and the quality of size and the performance of students. Two things that make a difference are the teaching style of the instructor and the context of size. We need to focus resources on the right area. Size is critical in the discussion sections. There is more than 1 parameter to look at.

The meeting adjourned at 9:00 a.m.