Overview: The Teaching Committee met nine times to discuss and address each charge. Most notable, we have selected the 2015 Teaching Award winner, recommended the adoption of the University’s new ACE procedure, put forth a motion to revise the questions on the ACE evaluations, and recommended against using spillover classrooms.

General Charge
The Teaching Committee shall be responsible for all matters relating to evaluation and improvement of the quality of instruction in the college, and for making appropriate recommendations to the dean and the faculty.

Specific Charges for 2014-15 Academic Year
1. Work with the Office of the Dean to review nominations from the College of Engineering faculty, and make recommendations to the administration for both College and Provost teaching awards.

   The nomination deadline for the President and Provost Award for Teaching Excellence elapsed before the Teaching Committee convened for activity. In general, we recommend that the Office of the Dean nominate prior College Teaching Award winners and nominees for the Provost Teaching Award. Nomination packages should be solicited in October or November to ensure meeting the year-end deadline.

   The Teaching Committee reviewed the College Teaching Award nominations and selected Professor Jon Kuhl (ECE) as the 2015 award winner.

2. Continue to monitor the adequacy of the College's system to check for satisfactory completion of pre-requisites for each course in a timely manner. Make recommendations for modification of this system if you determine that it is not sustainable.

   The Teaching Committee met with Megan Allen on February 2, 2015 to review the College's system. Megan presented the pre-requisite check program (CLASMAX 2.0) that she currently uses for all undergraduate students in College of Engineering courses, as well as Math I and Math II. The program flags each student as “yes” – pre-requisite(s) met, “exception” – exception to pre-requisite(s) has been manually granted, or “no” – pre-requisite(s) not met. For each “no,” Megan sends an email to the student to let them know that they have not met the pre-requisite requirements and that they will need to submit a pre-requisite waiver to remain in the class. She
estimates that she spent ~100 hours this semester handling pre-requisite issues (i.e., running the checks and sending emails to students).

Megan is working to get this process more automated through MAUI. Here, students would be blocked from registering for classes for which they have not met the prerequisites. Students who have been blocked will be redirected to Megan. Students who plan to take the pre-requisite(s) over the summer for fall classes would have the ability to enter information about their summer course plans, would be given a placeholder in the fall class, and would need to provide Megan with transfer course information before classes start in August to avoid being dropped from the class roster. Implementation of this process is planned for Fall 2015 registration, and departments were contacted at the end of March to verify pre-requisite requirements for their administered courses. Faculty advisors would be encouraged to have students fill out the course pre-requisite waiver forms during their advising appointments so that the forms could be processed quickly without affecting student ability to register for courses.

We suggested that Megan see if the course pre-requisite waiver forms could be handled via WorkFlow. The paperwork would be routed through the advisor, student, instructor, and departmental representative (DEO or director of undergraduate studies) before going to Megan.

3. The 2013-2014 Teaching Committee has collected data regarding TA appointments for all 59- and 57- numbered courses, over the previous five years. Augment this data set for the most recent 12-month period. Using this data set and any other information you find useful, analyze the adequacy of TA support for all 59- and 57-numbered courses and propose means to meet the College's requirements.

The Teaching Committee collected the TA appointment data for AY2014-2015 and added them to the previously compiled data set (see supplementary information). The Teaching Committee recommends that the TA data be obtained at the beginning of the semester in a standard Excel file. It is difficult to collect consistent and unambiguous data at present. Core course coordinators may need to be consulted in addition to the department administrators. Data that would be helpful include: (a) number of students in course, (b) FTE TAs, (c) ratio of undergraduate to graduate TAs, and (d) ratio of grader vs. contact TAs.

The ratio of students enrolled to the FTE TAs for this academic year ranged from 33 (Electrical Circuits, Fall 2014) to 145 (Mechanics of Deformable Bodies, Spring 2015). We were unclear how these data were to be used to determine TA adequacy and about College requirements that must be met. We also believe that other questions may be more appropriate to ask as the College enrollments continue to increase. After our request for clarification, the EFC has directed us to revise this charge for next year (see below).
4. The College of Engineering has been asked to participate in a pilot revision of the University's Assessing the Classroom Environment (ACE) procedure. Work with Mr. Doug Eltoft to guide development of the pilot program, and provide a preliminary assessment of the pilot program's effectiveness. The assessment should include a comparison with the effectiveness of the previous procedure.

The Teaching Committee met several times with Keri Hornbuckle, Natalie Potter, and Doug Eltoft to demo, review, and pilot the new software. Based on our assessment, we unanimously recommend that the College of Engineering adopt the University's new ACE procedure. The rationale behind our recommendation was articulated in a memo to the EFC on February 17, 2015 (see supplementary information). Keri piloted the new software with several new faculty for their mid-term formative evaluations and received positive feedback for the procedure.

After reviewing the ACE questions during the software evaluation process, we submitted a motion to remove the question “Please comment on the weaknesses of the course and its instruction” from the end of each course evaluation. The motion, background, and rationale were presented to and accepted by the College of Engineering faculty in a vote at the faculty meeting held on March 27, 2015 (see supplementary information).

5. Work with the Engineering Technology Committee to evaluate the pedagogical effectiveness of the use of "spillover classrooms" in the Seamans Center to allow class sections greater than 70 students.

The Teaching Committee met individually with Michael Mackey (chair of the Engineering Technology Committee) and Er-Wei Bai (ECE DEO and originator of charge request) and Mona Garvin (faculty instructor of several courses considered for the spillover classroom arrangement) to discuss the past, current, and future need for spillover classrooms. We also reviewed distance learning literature for satellite classrooms and/or online classes vs. traditional lecture classrooms, which seemed the closest pedagogical match to the proposed spillover classroom scenario. Based on our review, we recommend that the College avoid using spillover classrooms. If no other recourse is available, then the College should proceed with caution and planning to implement spillover classrooms. Key concerns that must be addressed before developing spillover classrooms were articulated in a memo to the EFC on March 3, 2015 (see supplementary information).

6. Recommend specific charges for the 2015-2016 College of Engineering Teaching Committee.

- Oversee the College Teaching Award nomination and selection process and revise as needed.
• Continue to monitor the adequacy of the College’s system to check for satisfactory completion of pre-requisites, especially as the new process is implemented in MAUI this fall.
• Continue to collect data regarding TA appointments for all ENGR (formerly 059- and 057- numbered) courses. Using this data set and any other information you find useful, explore the impact of increased College enrollment on TA sustainability and the undergraduate and graduate educational experiences.
• Monitor the proposal to replace Desire 2 Learn with Canvas, especially as the pilot is implemented this summer. (This issue was brought to the committee by Gary Christiansen.)


The final report is herewith respectfully submitted with several items of supplementary information:
• TA data for 059 and 057 courses: Fall 2008 – Spring 2015
• Memo recommending the adoption of the University’s new ACE procedure
• Motion to remove question from ACE evaluation form
• Memo recommending against implementation of spillover classrooms

Julie L. P. Jessop
Associate Professor
Chemical & Biochemical Engineering

059:005 EPSI

![Graph showing ratio of students enrolled to FTE TAs for 059:005 EPSI from F08 to S15.]

059:006 EPSII

![Graph showing ratio of students enrolled to FTE TAs for 059:006 EPSII from F08 to S15.]


059:007 Statics

059:008 Circuits

059:009 Thermodynamics

057:010 Dynamics
057:015 Materials Science

057:017 Computers in Engineering
057:019 Mech. Def. Bodies

057:020 Fluid Mechanics
057:021 Design for Manufacturing

ratio students enrolled to FTE TAs

F08  S09  F09  S10  F10  S11  F11  S12  F12  S13  F13  S14  F14  S15
The Teaching Committee unanimously recommends that the College of Engineering adopt the University’s new ACE procedure. We have met with Doug Eltoft and Keri Hornbuckle several times to preview the new ACE procedure, and I have used the survey tool to successfully complete a TA evaluation for my Fall 2014 course (see the December 2014 Interim Report for details). In our assessment, we have found the following to be compelling reasons to change to the new ACE procedure:

1. **Student response options are much more flexible with the new system than the current.** Students are able to use their phones or handheld devices to complete the course evaluations, as well as computers. When asked at the end of my TA evaluation, students overwhelmingly preferred the new ACE procedure over that which is currently in place for the College.

2. **Faculty will be able to review the student response rate for their course evaluations in real time with the new system so that they can offer student reminders and incentives for survey completion.** In my pilot run, I was able to obtain 89% submission rate with minimal encouragement (two reminder emails) and the promise of a class treat.

3. **The report capability is far superior with the new system.** Reports can be exported in Excel worksheets such that answers to questions are collated by (anonymous) respondent. For instance, it is possible to tell if one student is making the same comment in multiple sections as opposed to several students making the same comment.

4. **The new system is much more flexible and contains a survey tool such that faculty can include their own questions on the College-required course evaluation or distribute their own surveys.** Answers to these questions are not visible to others unless the faculty member wishes to share the information.

5. **The University will allow the College of Engineering to program its own unique survey delivery schedule.** Thus, we can continue to be autonomous with our selection of evaluation timeframe.

6. **The new system is ready to implement now, while the current system would require significant work to update and maintain.** Doug has indicated that serious technical issues would need to be addressed with the current system now in order to keep it functional.

Please let me know if you require any further information to approve moving to the new ACE procedure. Keri would like to run a beta test with the mid-semester formative teaching evaluations for assistant professors in the College, and preparations must begin shortly for the new system to be implemented.
Motion: Remove the question “Please comment on the weaknesses of the course and its instruction” from the end of each course evaluation. Revise the final question to read “Please comment on how the course might be improved.”

Background: The College of Engineering faculty voted on the questions that would be included on all course evaluations. The current EASY ACE form includes three short answer questions:

1. Please comment on the strengths of the course and its instruction.
2. Please comment on the weaknesses of the course and its instruction.
3. Please provide additional comments on how the course might be improved.

The University of Iowa will be implementing an universal course evaluation software within the next year that will replace the College’s EASY ACE program.

Rationale: Questions 2 and 3 are redundant in intent (as signified by the wording “additional comments” in Question 3). Removing Question 2 reduces the student workload in completing the evaluation; retaining Question 3 invites students to offer solutions to perceived weaknesses rather than simply complaining about them. In addition, Question 3 focuses on positive opportunities (i.e., areas for improvement) rather than negative shortcomings (i.e., weaknesses). Finally, the advent of the new UI course evaluation software presents the opportunity to make this change more easily.
The Teaching Committee recommends that the College avoid using spillover classrooms. If no other recourse is available, then the College should proceed with caution and planning to implement spillover classrooms. In a literature review to determine pedagogical effectiveness, the Teaching Committee was not able to find articles on classroom arrangements described in the spillover classroom scenario. The closest match was in distance learning literature for satellite classrooms and/or online classes vs. traditional lecture classrooms:

Based on the literature, students at satellite locations can perform as well or better than students in the lecture location. Key components in student success and satisfaction include: instructional team quality, quality of technology, student engagement, student motivation, and student perceptions.

The Teaching Committee recommends pursuing other options before using the spillover classroom scenario to address its growth issues. Two major concerns are to maintain good pedagogy and the small-college environment.

- Could multiple sections of the course be offered in the same semester?
- Are there larger classrooms on campus that could be used for the course until enrollment justifies multiple sections?
- Could the course be offered multiple times a year in order to meet the demand?
- Could the course content be offered outside of class (e.g., lecture captures or podcasts), while the students meet for class activities in small discussion sections?
- Could the course be converted to an interactive web-based course (e.g., Statics in the summer)?

If the above options are not feasible, then the Teaching Committee recommends proceeding with appropriate caution and planning when using the spillover classroom scenario to address its growth issues. Two major concerns are to maintain good pedagogy and to manage student perception.

- The distribution of students between the two classrooms must be managed carefully to avoid the perception of two tiers of “citizenship” (i.e., first class and second class). How will students be placed in the spillover classroom? By College affiliation? By registration time? By random selection? By self-selection?
- How will the instructor interact with students in each classroom? Will the instructor rotate between the two classrooms?
- The first key component is to have a strong instructional team in the classroom without the instructor. Teaching assistants must be trained appropriately to engage and interact with the students proactively.
- The second key component is to have strong interactive learning activities to keep students engaged throughout the class period. Lecture should not be the dominant method of teaching; otherwise, recorded lectures may be more effective.
- The Office of Teaching, Learning & Technology should be consulted to assist with development, assessment and evaluation of course activities, student learning and pedagogical effectiveness.