The 2013-2014 UI College of Engineering Curriculum Committee consists of:

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<tr>
<th>Members</th>
<th>Term Expiring</th>
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<tr>
<td>Olesya Zhupanska (MIE) (Chair)</td>
<td>May 2015</td>
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<td>Allen Bradley (CIE)</td>
<td>May 2015</td>
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<td>David Wilder (BME)</td>
<td>May 2016</td>
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<td>David Andersen (ECE)</td>
<td>May 2016</td>
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<td>David Murhammer (CBE)</td>
<td>May 2016</td>
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<td>Dean Keri Hornbuckle, <em>ex officio</em>, nonvoting.</td>
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<td>Student representative, nonvoting: Danny Yocius</td>
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and its Engineering Faculty Council liaison is Soura Dasgupta.

The Committee’s general charge is as follows: “The Curriculum Committee shall be responsible for reviewing and evaluating all existing and any proposed curricula within the college, for reviewing and evaluating all existing and any proposed courses taught within the college or required in any of its curricula, and for making appropriate recommendations to the dean and the faculty.”

The Committee’s specific charges for the 2013-2014 academic year are:

1. Review Course Activity Reports (CAR) for the College of Engineering core curriculum courses (59: xxx) in coordination with the core course coordinators.
2. Continue to monitor course quality and folders for the math, physics and chemistry courses in the College of Engineering curriculum.
3. Consider whether it is pedagogically appropriate for introductory courses in Mathematics, Physics, and Chemistry to rely exclusively on multiple choice questions in exams.
4. Explore avenues to improve communications between the Curriculum Committee and the Department of Physics and Astronomy.
5. Review GEC requirements in light of the new course numbering system and revised ABET and CLAS designations.

**Regarding Charge #1:**
The Committee reviewed the CARs for all of the 059:xxx courses in the College. All the CARs for the 059:xxx courses are complete for academic year 2012-2013. None have been completed for the current academic year, but the Dean’s office intends to work with the core course coordinators to obtain them. The format and content of all the CARs is similar. Although quantitative evaluations are no longer mandated, most CARs employ a quantitative evaluation of course goals; one course evaluates the overall student performance only, while another no longer includes any quantitative evaluation. All CARs contain a running log describing changes and qualitative self-evaluations from semester to semester (some of which are nearly ten years long). Overall, course assessments for each 059:xxx offering appear to be satisfactory. The Committee has no recommendations for changes.

The Committee also reviewed the CARs for all the 057:xxx courses in the College. All the CARs for the 057:xxx courses are complete for the Spring 2013 semester; two others are available for the Fall 2012 semester. Before academic year 2012-2013, CARs are not available for most courses since Fall 2008. The format and content of the CARs is widely varied. Some use the same format as the 059:xxx courses; others follow formats developed by individual departments. Although quantitative evaluations are no longer mandated, most CARs employ a quantitative evaluation; some evaluate of course goals, one evaluates the overall student performance, and one uses student surveys. Only one CAR does not include a quantitative evaluation. Every CAR includes a qualitative self-evaluation and recommendations, either in the form of a running log, or a self-reflection on the semester. Overall, course assessments for each 057:xxx offering appears to be satisfactory.

Recommendation #1: The Committee recommends that the Dean’s office gather CARs for these courses again from the 2013-2014 academic year so that they are available for departments.

Regarding Charge #2:

The Curriculum Committee contacted each of the three departments and obtained copies of course materials for recent offerings of each course in the CoE curriculum. The course materials were analyzed and discussed at three meetings of the committee. Course coverage in all these courses was appropriate.

Course materials for Math I, II, III, IV, and V have been collected and include syllabi and all copies of the exams for Fall 2013. Collection of samples of student work is done in Spring 2014. Math I (22M:31) and Math II (22M:32) courses use exclusively multiple choice questions in exams, but not Math III, Math IV, and Math V, where statement “show all your work for full credit” is explicitly included in the exams. It should be noted that the Mathematics Department removed Math IV: Differential Equations from the list of prerequisites and added Math IV to the list of corequisites for Math V.

Course materials for Principles of Chemistry I & II have been collected and include the course syllabi, updated ABET syllabi, homework assignments, exams and lab assignments. Student work on homework and exams will not be collected since the homework assignments are done online through the "Mastering Chemistry" website and the exams are all multiple choice. The ABET notebooks will be completed by including examples of student work on lab reports, which will be collected by the Engineering Tutoring Center.
Course materials for Physics I have been collected and included syllabi, exams, and homework assignments. Materials related to Physics II are collected during the Spring 2014 semester. All exams and homework assignments in Physics I are assigned using WileyPLUS, a web-based application that allows for automated assignments and grading of multiple choice and multi-part problems. Both multiple choice questions and multi-part problems are used in Physics I homeworks and exams. Multi-part problems allow for tracking students’ problem-solving pathways.

**Regarding Charge #3:**

The Curriculum Committee analyzed and discussed course materials for recent offerings of each Mathematics, Chemistry, and Physics course in the CoE curriculum. It was determined that for these recent offerings, there were no pedagogically inappropriate examinations or homework assignments. Dean Hornbuckle also noted that there was no negative feedback from CoE students that has reached her office regarding courses from the three departments. Further, the Curriculum Committee representatives met in person with responsible faculty from each of the departments and engaged them in discussions about the question of multiple choice exams. Not surprisingly, the multiple choice exams in these departments are driven by resource constraints. The Committee representatives came away from these meetings with the sense that each of the departments was aware of potential issues and pitfalls arising from multiple-choice exams and worked to make their exams as pedagogically appropriate as possible.

The representatives from the Curriculum Committee that made contact with each of the three departments also noted that the departments were very willing to work with the CoE to ensure that their offerings were consistent with what we wanted. As a whole, the committee was pleased with the interactions during this academic year.

**Recommendation #2:** The Curriculum Committee recommends that the standing charge to future Curriculum Committees be modified to include an item asking the committee to continue monitoring these courses (including in-person meetings with each of the departments) to make sure that quality is maintained. The Committee feels that such personal interactions will also further the alliance between the departments and the CoE in providing the best possible education to our students.

**Regarding Charge #4:**

There were no communication problems with the Department of Physics and Astronomy in AY 2013-2014. The Department administration is well willing to continue to work with the CoE to ensure that Physics courses offerings are consistent with the engineering program objectives. The Committee feels that in-person meetings with each of the science departments are essential for maintaining good relationships (Recommendation #2).

**Regarding Charge #5:**

This charge was created due to changes in both the ABET GEC requirements:
"(c) a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives."

as well as changes in the UI course numbering system and CLAS course designations.

These changes provided the opportunity to review what we believed to be important for our students, but more immediately, required us to accommodate changes in the UI course numbering system and CLAS course designations.

The Curriculum Committee gathered information about the issues from both Carl Locke, the ABET consultant for the CoE and Megan Allen, the CoE Registrar.

- We asked Carl Locke the following (Wilder email of 20 Jan 2014, 2:13 PM):

  "Historically we have had very specific GEC's in the College of Engineering (CoE) and we are now reviewing those for the reasons noted above. The College of Engineering (CoE) has the opportunity to redefine the general education component required of our undergraduate students. FOR INSTANCE, the CoE Curriculum Committee COULD recommend allowing students to use their discretion to take any class on campus that they feel is relevant to their career goals. My question for you is: Do you know anything about the background of the following: Regarding ABET changes: In "General Criterion 5. Curriculum, item (c)" From the attached ABET "eac-criteria-2013-2014" the following is stated:
  "(c) a general education component that complements the technical content of the curriculum and is consistent with the program and institution objectives."
  Specifically, did ABET have anything in particular in mind when they wrote this? I am asking because the answer has very broad implications for our curriculum. One POSSIBILITY is that the GEC's could be treated as additional coursework in an Elective Focus Area or in a personal area of interest. The student could chose to take more classes, leading to a second degree, or the student could delve deeper into an area by taking classes in Law, for example. This could lead to interactions with academic advisors that are more in-depth than just checking to see if the student is following a prescribed menu. The student would have the freedom to argue that certain classes, not permitted as options now, would be more helpful for her/his career goals.
  I believe that the more we allow students to carry their engineering perspective and expertise into other areas of interest, the better they will be able to show others the value of an engineering perspective on problem-solving. I believe that allowing them to pursue their own interests will result in deeper, more enthusiastic exploration of GEC course content.
  One does not need to look very far to find powerful examples of the benefits of using engineering perspectives and problem-solving methods to address challenges in traditionally non-engineering disciplines."

Carl Locke responded (email of 20 Jan 2014, 3:42 PM):

  "ABET has changed the emphasis on what formerly was called Humanities and Social Sciences. As you suggest, the previous ABET requirements specified a number of hours in each category. With the change in the Criteria away from the input specifications (number of hours in the areas) to what the education has achieved, the HSS has moved to General Education requirements. The ABET Criteria now depend upon the institutions and programs to define what courses meet the general education requirements. Many institutions have redefined their curricula wrt the general education requirements and ABET accepts those definitions.
  So, with all that, the bottom line is that you folks are moving in the direction many institutions have done in the past few years. You should be okay with where you are going. I would encourage you to include a description of what you have done in the Self Study. Section 5 of Criterion 5 in the Questionnaire is where that goes:
  5. Describe how your program meets the requirements in terms of hours and depth of study for each subject area (Math and Basic Sciences, Engineering Topics, and General Education) specifically addressed by either the general criteria or the program criteria You will be okay. Carl"

- Based on this, the Curriculum Committee offers the following recommendation
**Recommendation #3:** The Curriculum Committee recommends that a broader discussion involving various CoE constituents (faculty, students, alumni) of the GEC requirements is conducted before a new GEC policy is developed and adopted. The development of the new policy is suggested as one of the Curriculum Committee charges for the next AY.

- David Wilder will also discuss new GEC requirements with the CoE Advisory Board during the meeting in April.

- On the more immediate issue, Megan Allen, the CoE Registrar, reported on the new course numbering system and the new CLAS course designations. She noted that new numbering system in CLAS eliminated a clear division between lower and upper level classes. This makes it difficult to maintain the current CoE GEC requirements specific to the number of the required lower and upper level courses.

- The committee members discussed this issue and proposed a motion that the CoE GEC policy be modified as follows, removing the highlighted, “crossed-out” text from the current policy:

> “Students earn 15 s.h. in humanities and social sciences courses chosen from approved departments and programs; at least 3 s.h. must be earned in courses that the College of Engineering has designated as humanities courses, and at least 3 s.h. must be earned in courses that the college has designated as social sciences courses. To ensure depth, students must earn at least 6 s.h. of general education credit in courses numbered 100 (3000) or above, with at least one course numbered 100 (3000) or above taken in the same department as a lower level course the student already has completed. Individual B.S.E. programs may require further depth in one area and may include general education requirements in a student's elective focus area.” (the current CoE policy includes statements that are highlighted and stricken through)

**Regarding Charge #6:**

The Committee recommends the following charges for the next year.

**Recommended Charge #1:** Develop a new CoE GEC policy consistent with the current ABET EAC criteria. Conduct a broad discussion involving various CoE constituents (faculty, students, alumni) of the GEC requirements before a new GEC policy is developed and adopted.

**Recommended Charge #2:** Review prerequisites and corequisites for the College of Engineering core curriculum courses (59: xxx & 57:xxx) in coordination with the core course coordinators.
The second charge is a result of discussion of pre/co-requisite courses for Statics initiated by the Statics course coordinator. This discussion prompted the Committee to recommend evaluation of pre/co-requisites for all core courses.

**Regarding Charge #7:**

Submission of this report completes Charge #7

Respectfully submitted April 1, 2014.