CE 403 Summary

Beginning in the Fall of 2002, graduating civil engineering students have been required to take a half-semester, non-credit course entitled CE 403 – Civil Engineering (CE) Curriculum Assessment. This course allows the Civil, Construction, and Environmental Engineering (CCEE) Department to obtain assessment feedback from the students just prior to their graduation.

The main course assignment in CE 403 has been completed in a team setting where students are grouped together in order to complete the assignment. For the assignment, each of the teams were given one of the CCEE Department's educational objective to evaluate. Since the course enrollment varied by the number of graduating seniors, sometimes only a few of the educational objectives were evaluated. The teams were asked to evaluate the strengths and weaknesses of the Department in fulfilling the educational objective. The teams then provided recommendations on how the Department may be even more successful in fulfilling the education objective in the future. The results of the evaluation and recommendations are submitted in a memorandum. The educational objectives and recommendations for all of the CE 403 courses from the Fall of 2002 to the Spring of 2006 are summarized below:

Students will have effective communication skills.

Student recommendations:

- Continue to require students to practice oral presentations and to submit technical writing assignments (memorandums, research papers, proposal writing, etc.) in CE courses.
- Continue to integrate technical communication throughout the CE Curriculum.
- Provide more training in mechanics and grammar.
- Provide more examples of good writing.
- Provide more opportunities for students to revise documents and learn from their mistakes.
- Train professors in effective use of Power Point.
- Discourage professors from using Power Point to teach technical courses (CE 332, 333, 334).
- Teach students effective Power Point skills.

Students will have multidisciplinary teamwork skills.

Student recommendations:

- Continue to require teamwork activities throughout the curriculum.
- Incorporate other disciplines (mechanical, electrical, material science, etc.) into the capstone design course.

Students will understand business and project management principles including a basic understanding of cost estimating, planning, and scheduling of civil engineering projects.

Student recommendations:

- Eliminate three Social, Science, and Humanities (SSH) course credits and require Mgmt. 370, Management of Organizations

- Require more application of estimating and scheduling prior to capstone design courses.
- Provide cost estimating manuals for the senior design room.

Students will be motivated to continue their intellectual growth and professional development. Students will be encouraged to participate in cooperative education, internships, or progressive summer engineering employment.

Student recommendations:

- Continue to provide the support of Engineering Career Services.
- Continue to have CE faculty promote professional engineering licensure.
- Be sensitive/aware of timing of the Fundamentals of Engineering (FE) exam. Faculty should not schedule other exams or projects during this time.
- Utilize the FE Review Book as a reference book for classes.
- Offer credits to students who accept an internship or coop.
- Require an internship or coop.

Technology

Student recommendations:

- Use CADD throughout the curriculum (integrate into other courses).
- Offer more optional courses to teach technology such as Geographical Information Systems.
- Use more software for estimating and scheduling, in addition to Microsoft Projects.
- Provide more uniformity in teaching and using STAAD throughout the curriculum.
- Seek donations to improve/update surveying equipment.

General instruction/curriculum

Student recommendations:

- Introduce design earlier in the curriculum.
- Require more creativity
- Reduce requirements in the structural area. Combine the concrete and steel courses into one.
- Expand the CE 326 environmental course to two semesters. Cover pollution and analysis the first semester and water and water treatment the second semester.
- Offer more opportunities for expanded technical knowledge (foundation, railroad design, airport design, etc.)
- Eliminate Math 266, Differential Equations.
- Increase real-world applications.
- Use more practitioners to teach the capstone design courses.
- Use surveyors to teach the surveying labs.
- Decrease class sizes.
- Reduce the frequency of multiple-choice exams.
- Include more guest speakers throughout the curriculum.

Note: The above recommendations came from a small percentage of the civil engineering student body and may not always be representative of the majority of the students.