GECC Assessment of Engineering and Design

Senior Capstone Project:

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Spring 2010

GOAL BEING ASSESSED:

Students’ ability to showcase disciplinary knowledge, methods and skills through the preparation of an individual or group capstone project.

ASSESSMENT METHODS:

- **Method #1: Final Project Grade**
  Simulating a real world environment, students work in teams to apply disciplinary specific knowledge, methods and skills to plan, design, and develop a product. Assessment method #1 is based on final project grade.

- **Method #2: Peer Evaluations**
  Each student is required to grade their fellow team members on how they performed in the group. Results of peer evaluations correlate directly to the quality of the final project. Assessment method #2 is based on the average score from the student peer evaluation grades.

ASSESSMENT RUBRIC:

90-100% Demonstrates mastery of technical terminology, project planning and new product designs. Can adapt technology to new situations.

80-90% Demonstrates competency in technical writing and product design / production.

70-80% Comprehends typical processes involved in the planning, design and production of new/ unique products.

60-70% Demonstrates a basic knowledge design and production.

< 60% Demonstrates minimal knowledge
The assessment methods used are 1) Final Project Score, and 2) Peer Evaluations. The assessment results for each of the Senior Capstone classes offered by the Department of Engineering and Design are summarized in the following plots.
SUMMARY OF RESULTS
The above assessment data demonstrates that the course is doing an adequate job of meeting the goal of preparing a capstone project (in groups or individually) that showcases disciplinary knowledge, methods and skills. The consistency and quality of projects varies depending on the student groups. For example, in Spring 2010 four of the fourteen teams assessed were a little below our department’s expectations of disciplinary mastery. Peer evaluations reflect how well each team utilized each others’ unique skills and knowledge learned in prior coursework and life experiences to produce the final project. Data above reflect the relationship between peer evaluations and final project quality.

INTERPRETATION OF THE RESULTS AND RECOMMENDATIONS
We should examine ways to ensure a consistently high quality product. Perhaps midterm departmental input into progress of projects and/or more rigid periodic quality assessment would ensure consistency of course projects. Overall, we are very pleased with the results of the TECH/ENGR 490 Senior Capstone class as scope of work gets better each quarter it is offered.