EXPECTED EDUCATIONAL RESULTS

As a result of completing this course, the student will be able to do the following:

1. Distinguish between major fields of the engineering profession and identify various career possibilities within any given field
2. Describe general structure of the 4-year engineering curriculum
3. Describe objectives of various professional societies and the advantages of membership
4. Get a better understanding of values (ethics) and responsibilities of an engineer
5. Describe and use customary and SI system of units, converting various physical quantities from one system to the other
6. Verify dimensional consistency of a relationship among physical quantities
7. State and compute various types of errors and check their propagation
8. Collect and record technical data, using different graph scales and coordinates to represent data and establish empirical relationships
9. Define basic statistical terms as they are applied in quality control, computing by least squares the best fit for the data and determining the correlation coefficient
10. Describe and use basic terms in engineering economics viz. present worth, depreciation, annual rate of return, etc
11. Distinguish approximate and exact solutions to equations and find roots of equations in one variable by interval methods

GENERAL EDUCATION OUTCOMES

This course addresses six of the ten general education goals of the college and they are listed below.

I. The general education outcome relating to communications:

   a. Students enhance reading skills by reading topics from reading material assigned and hand outs in the form of notes.

   b. Students develop writing skills by practicing exercises, providing short answers to tests/assignments questions and learning correct usage of technical terms in report writing

   c. Students improve their listening skills by actively participating in class discussion/lecture or demonstration to learn basic concepts

II. The general education outcome relating to problem-solving and critical thinking skills
Students demonstrate their ability in problem solving through class discussion, group assignments, tests and technical report.

III. The general education outcome relating to the use of mathematical concepts
Students apply mathematical concepts to evaluate, understand and process technical data to solve problems

IV. Students organize and analyze the information to complete assignments and reports by using word processing and spreadsheet software

V. The general education outcome relating to the use of scientific inquiry
Many of the topics in this course are carefully selected so as to require them to comprehend, understand and appreciate the importance of scientific inquiry as an integral part of engineering profession

VI. The general education outcome relating to analyzing competing values
Students are introduced to various issues relating to ethical values and professional responsibilities and learn the role of an engineer in the work place.
All questions in the final exam were used for assessment and therefore majority of EEOs and GEOs were assessed.

**Dunwoody campus:**

*(Jay Terry)*

Students scored 70% or higher in 268 questions out of a total of 484 questions ~55.30%

**Comments:**

- The performance is below the average expected.
- Concepts related to the field of engineering and understanding what engineers do seem be well understood according to performance. Skills related to engineering such seem to be less developed according to the assessment.
- The exams were primarily problem solving and critical thinking with very little multiple choice and T/F.
- Assessments from Spring 2010 are not available at this time. Assessments were taken from Fall and Summer semesters.

**Clarkston campus:**

*(Anant Honkan)*

Section 1:

18 students * 9 questions (choice for last question) = 162 questions
Students scored 70% or higher in 93 questions out of a total of 162 that is 57%

section 2: 12 students 9 questions = 108 questions
Students scored 70% or higher in 79 questions out of a total of 108 that is 73%

Combined:

Students scored 70% or higher in 172 questions out of a total of 270 that is 64%

**Comments:**

- The assessment results of 64% reflect the EEOs were achieved to a satisfactory level.
- Many common factors were observed.
- Students had poor computing skills with college level algebra.
- Many did not take advisement before registration.
- Many students did not come prepared by reading although reading was emphasized in icollege constantly.
- A few students took classes on two campuses with a 15 minute for travel.
- Some students missed many classes.
- Many students had poor study skills before taking this engineering course
- A few students were working full time and came tired and unprepared to evening classes.

Prepared by: Anant Honkan