ENGR 162 Lab Syllabus, Fall 2008

Course structure:
Labs: Monday, Tuesday, Wednesday – 8:30 to 9:20 a.m. in “The Stacks” (Thomston Hall Room A233, second floor).
Design Workshops: at scattered times and various locations.
Website: https://toolkit.itc.virginia.edu/ENGR162-17/
Homework: Please see the Materials section of the website for homework details.

TA Office Hours: Tuesday and Thursday, MEC 216, 7-9 pm (starting Tuesday, Sept. 2nd). More sessions will be held as needed.

TAs will be available to help students individually or in small groups on homework concepts (but they will not work problems out for students). The MEC 216 classroom has the same hardware and software as can be found in the Stacks.

Goals of the course:
1. To ensure that students master essential computer skills necessary for engineering studies and eventual careers, including use of the Internet (search engines), spreadsheets (MS Excel), and an equation solving/symbol manipulation software package (MathCAD).
2. To ensure that students master fundamental problem solving techniques and mathematical skills common to engineering practice, including data plotting, basic statistics, curve fitting and matrices.

Topics covered:
Representing technical information
  Plotting functions and data
  Variables and units
  Empirical functions
Modeling, visualization, and engineering graphics.
Analyzing and presenting data
Statistics – fundamentals of descriptive statistics; distributions, measures of central tendency, variability, and correlation.
Curve fitting and regression
Matrices and their role in solving equations
The nature and logic of iterative solutions

Software used in ENGR162 Labs
  Microsoft Excel
  MathCAD
Textbooks


Grading

All assignments will be graded and included in the final grade performance given for the laboratory section of ENGR 162. The percentage of the laboratory grade used toward the student’s final ENGR 162 grade will be determined by the ENGR 162 workshop instructor.

ABET Assessment of Student Performance Outcomes

ENGR 162 laboratory performance will be represented through grade performance as indicated through a random sampling of student work of a specific group of laboratory assignments. The performance on these assignments will map to the ABET outcome (c.) – Students demonstrate their ability to formulate problems for computational solution and to apply computer applications to analytical problem solving, data analysis, and graphical presentation. As a result the ENGR 162 laboratory course goals map to this program outcome as follows:

Course Goal 1: ABET outcome c (D)
Course Goal 2: ABET outcome c (F)

D – In depth; F – Familiarity; X – Exposure