INTRODUCTION TO ENGINEERING I

Midterm Exam Study Guide

The midterm exam will be held on Friday, November 18, 1:50 PM - 3:20 PM (90 minutes). Room assignments will be posted outside the Scupi main office on the morning of the exam.

The exam is CLOSED BOOK, CLOSED NOTES, CLOSED PHONE, CLOSED COMPUTER. You should bring a calculator (check the batteries) and a straightedge or ruler. You may also bring one A4 page of notes (both sides).

The exam will include material covered through November 4 (Dimensions and Scaling).

You should be able to do these things:

• Read and extract information from graphs, such as how one variable depends on another.
• Use dimensional analysis to find the relationship between properties of a system.
• Do simple estimation and unit conversion problems.
• Express results with the correct units and number of significant figures.
• Apply scaling laws to derive relationships and predict results.

You should know these things:

• The dimensions and SI units of common properties (length, area, volume, energy, force, temperature, etc.)
• Standard SI unit prefixes (e.g., M = 10^6, m = 10^3, etc.)
• How fast do vehicles go on the highway?
• The meaning of these words: ratio, cylindrical, inverse, expression, DVD, derive, diameter

To do well on the exam:

• Read and understand the entire problem before your start working on it.
• Focus on the important aspects of the problem description.
• Show your work.
• Some problems have multiple-choice answers (a, b, c, etc.). You must show how you arrived at your answer. Don't guess; answers without sufficient reasoning will not count.
• If there is something you don’t understand, ASK! We will help you.