Syllabus for  
ENGR 107: Engineering Fundamentals  
Section 003, Call Number 71176  
(Fall 2009 Semester)

Instructor: Carl G. Schaefer, Jr., adjunct professor.

Email: cschaefer@gmail.com (I check this frequently) or cschaefer3@gmu.edu (I check this less frequently).

Phone: 703-331-5723.

Office Hours: By appointment only.


Class Meets: Tuesday, 4:30 pm – 7:10 pm, Room 201, East Building

Course Web Site: All lectures, class handouts, homework, and announcements will be posted on the ENGR107 web site located at http://mason.gmu.edu/~cschaefer3/.

GRADING

20% Group Project
15% Individual Paper
30% Mid-Term Exam
35% Final Exam (Final Exam Date: December 15, 2009, 4:30pm – 7:15pm)

Exam and Honor Code Policy: Make-up exams will only be given to students with excused absences. Make-up exams must be arranged in advance of the exam date. All exams will be closed book, closed notes. Although students are encouraged to work together on projects, all work must be original to students and to the project groups. The GMU Honor Code will be strictly enforced.

Project Policy: Project details and schedule will be assigned and discussed in class. Each class period will be divided into a lecture session and project session. In general, I will lecture for the first 120 minutes of class. The remaining 45 minutes will be set aside for groups to work on the semester project.

General: The use of cellular phones, pagers, or other personal communications devices while class is in progress, or during tests, will not be tolerated. If you must have them, please turn audible ringers off and take conversations outside of class. The class is asked to respect the rights of other students and the instructor and to avoid conversations during class.
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Sep 1: Introduction to the Engineering Profession:
  Period 1: Introduction to Engineering (Class discussion)
  Period 2: The Engineering Professions (Chapter 1, Eide, et al)

Sep 8: Engineering Ethics:
  Period 1: Professionalism and Ethics (Chapter 1, Eide, et al; Class notes):
    Project Assignment and Class Discussion
  Period 2: Ethics Case Studies (Case study class handouts)

Sep 15: Introduction to the Engineering Design Process:
  Period 2: Engineering Design – A Process (Chapter 2, Eide, et al; Class notes)

Sep 22: The Engineering Design Process and Systems Engineering:
  Period 1: Systems Engineering Process (Chapter 3, Eide, et al; Class notes)
  Period 2: Engineering Design – An Example (Class notes)

Sep 29: Engineering Solutions:
  Period 1: Engineering Tools (Class notes)
  Period 2: Problem Analysis (Chapter 3, Eide, et al)

Oct 6: Representation of Technical Information:
  Period 1: Collecting and Recording Data (Chapter 4, Eide, et al)
  Period 2: Empirical Functions and Curve Fitting (Chapter 4, Eide, et al)

Oct 13: Engineering Estimations and Approximations
  Period 1: Engineering Estimations and Approximations (Chapter 5, Eide, et al;)
  Period 2: MIDTERM EXAM

Oct 20: Project Preliminary Design Review
  Period 1: Group presentations and peer review
  Period 2: Individual Design Papers Due

Oct 27: Engineering Analysis:
  Period 1: Dimensions, Units, and Conversions (Chapter 6, Eide, et al)
  Period 2: Data Analysis and Statistics (Chapter 8, Eide, et al; and group fatigue experiments)

Nov 3: Introduction to Mechanics and Vectors:
  Period 1: Vector Analysis (Chapter 9, Eide, et al)
  Period 2: Vector Analysis (Class notes and examples)

Nov 10: Introduction to Electrical Theory:
  Period 1: Electrical Theory (Chapter 11, Eide, et al)
  Period 2: Electrical Theory (Chapter 11, Eide, et al; class notes and examples)

Nov 17: Contemporary Topics in Engineering:
  Period 1: Guest Speaker: Martin Gomez
  Period 2: Guest Speaker: TBA

Nov 24: Group Project Presentations
  Period 1: Project Presentations
  Period 2: Project Presentations

Dec 1: Period 1: Design Competition
  Period 2: Design Competition

Dec 8: Period 1: Final Exam Review
  Period 2: Final Exam Review

Dec 15: FINAL EXAM