ME 345: Modeling and Simulation
Course Information
Spring 2012

Instructor: Frank Fisher
Office: EAS 307
Phone: 201-216-8913
Email: Frank.Fisher@stevens.edu
Class webpage: http://personal.stevens.edu/~ffisher/me345

Office hours: Office hours are available immediately after class, or by appointment.

Lecture/discussion times: Friday 1-2:40pm (Sections A/B) or 3-4:40 (Sections C/D), Babbio 122
Lab: Section A Thursday 3 - 4:40, Section B Monday 10 - 11:40,
Section C Thursday 1 - 2:40, Section D Tuesday 10 - 11:40

Teaching Assistants: Lin Dong (ldong@stevens.edu

Textbook: N/A. Students are REQUIRED to purchase a 3-ring binder to assemble the notes and handouts given during discussion and lab sessions.

References:
1. Finite Element Analysis: Theory and Application with ANSYS (Third Edition), S. Moaveni, Pearson Education, Inc, Upper Saddle River, NJ, 2007, ISBN 0131890808
2. Graphics Concepts with Solidworks Second Edition, R. Lueptow and M. Minbiole, Prentice Hall, 2003, ISBN 0131409158 (optional)
3. Modeling and Analysis of Dynamic Systems, 3rd. Ed. Close, Frederick, and Newell, Wiley, 2002, ISBN 0-471-39442-4

Evaluation/Grades:
- 3 case studies (20% each), approximately evenly spaced throughout the semester[1]
- Cumulative final quiz, 20% (will be discussed during the first lecture)
- Homework and class participation, 20%[2]

Course policy: Attendance *and* participation in class discussions are required. Class policy will be discussed in detail during the first lecture meeting.

Lab policy: As discussed during the first lecture, the computer labs are designed to require students to THINK and EXPLORE as they progress through the tutorials. The lab assistant(s) are there to assist with thoughtful questions and issues; they are not there to hold your hand through the tutorial. Students abusing the assistance of the TAs will have points deducted from their lab grade; students assisting classmates with questions on the lab will be awarded extra credit for the lab.

Course Description: This course uses Solidworks and related packages, ProEngineer, ANSYS, Matlab/Simulink, and other software to model discrete and continuous systems of interest in mechanical engineering. Students taking this class will be able to represent systems, processes, and products using appropriate modeling strategies, analyze and visualize the simulation results, and design systems based on these models and simulations. The focus of the class is on the development of general modeling and simulation techniques that are discipline and software independent.

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[1] The Case Studies will be completed in groups of 3 to 4 students. You cannot work with the same student for more than one Case Study. Each member of the group is equally responsible for each problem in the Case Study.

[2] Unacceptable homework and/or class participation performance may result in a net *loss* of points for the course