ME451: Control Systems

Lecture 0
Introduction

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Instructors

- **9:10 Class/Lab Instructor:** Dr. Clark Radcliffe, Professor, Mechanical Engineering
- **Website:** http://www.egr.msu.edu/~radcliff/
- **Office:** 2445 EB (email for an Appoitment)
- **Email:** radcliffe@egr.msu.edu
- **Office Hours:** 2445 EB, MWF 10-11 am, Extra hours by appointment
- **12:40 Class:** Dr. J. Choi, 2459 EB,Email: jchoi@egr.msu.edu

Course information

- Lecture website http://www.egr.msu.edu/classes/me451/radcliff
- Laboratory website: http://www.egr.msu.edu/classes/me451/radcliff/lab
- Required Text: *Feedback Control Systems*, C. L. Phillips and R. D.Harbor, Prentice Hall, 4th edition, 2000

Course Components

- Lectures (about 40 lectures)
- Old Math Quiz
- Midterm1, Midterm2
- Final (Final exam period)
- Laboratory work
- Grading:
  - Homework (10%), Math Quiz (5%), Exam 1 (17.5%), Exam 2 (17.5%), Final Exam (comprehensive) (25%), Laboratory work (25%)
  - Homework will be due in one week from the day it is assigned (Wednesdays?)

Tips to do well in this course

- Come to the lectures
- Print out & bring lecture slides to the lecture.
- Do Exercises at the end of each lecture.
- Do homework every week.
- Read the textbook and the slides.
- Make use of instructor/lab office hours.
- Use and be familiar with Matlab.

Math Prerequisites

- Complex Numbers
  - Add, Subtract, Multiply, Divide
- Linear Algebra
  - Matrix Multiply, Inverse, Sets of Linear Eq.
- Linear Ordinary Differential Equations
- Laplace Transform to Solve ODE's
- Linearization
- Logarithms

Dynamics and Physics

- Modeling of Physical Systems
  - Mechanical, Electrical, Thermal, Fluid
- Dynamic Responses
  - 1st and 2nd Order Systems of ODE's
- To get started, Read …
  - Appendices A and B
  - Chapter 1
- *Buy The Book* - Then Keep it!