ME451: Control Systems
Lecture 0
Introduction

Dr. Clark Radcliffe
Mechanical Engineering

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 appointment)
  Email: radcliffe@egr.msu.edu
• 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!*