

ME 447 - Computer Control of Machines & Processes - Spring 2008 Syllabus

Course web site: <http://mechatronics.me.wisc.edu/me447>

Instructor:

Erick L. Oberstar

Room 2151, Mechanical Engineering

Telephone: (608) 262-6446

E-Mail: oberstar@engr.wisc.edu

Office Hours: 3-5:00 Wednesday

Course objective is to develop a working knowledge of:

- Modeling physical systems for purposes of control system analysis and design
- Feedback control architectures and options
- Analytical approaches for discrete control systems
- Design methods and tools for discrete control systems
- Control computer architecture
- Software and hardware principles for computer control
- Sensors for computer control
- Programmable logic control

Reading and viewing:

- The textbook is Computer Control of Machines and Processes by Bollinger and Duffie (online .pdf).
- Recommended reading and video lectures are listed in the course plan.
- Video lectures can be found on the course web site or on video tape at the Wendt Library.
- You are responsible for fully understanding the notes for the video lectures.

Homework and Labs:

- Homework and Lab Report submissions must adhere to the posted format.
- Use of MATLAB is required in homework problems and labs
- MATLAB is available on many of the computers at CAE.
- Students must be familiar with MATLAB basics after the 1st week of class.
- Homework and labs will not be accepted late without prior agreement.
- The lowest homework assignment grade will be discarded, along with the lowest lab grade.
- Completeness of assignments will be as significant a factor in grading as correctness.
- You are responsible for fully understanding the homework problems assigned.
- You are responsible for fully understanding the lab assignments.
- You are responsible for increasingly in-depth understanding of lab equipment over the semester.
- **Off Campus Lab Access is through the course Web Site (Online Motion Control Experiments).**
- **Lab Time will be 2:25 PM – 5:00 PM on Tuesdays in Mechanical Engineering Room 2145**

Contributions to final grade:

10% - Homework problems

40% - Labs

30% - Quizzes

20% - Final exam

Notes:

- You are responsible for the videos, lecture notes, labs, homework, and integrating and extending ideas.
- Understanding of this material, through means appropriate to you, is a requirement.
- This understanding can be achieved through reading, viewing, discussions, labs and problem solving.
- You are responsible for choosing and pursuing the necessary means.
- Plan for at least 9-12 hours per week on this course. Some will need more time, some will need less.
- E-mail is the most efficient way to communicate outside of office hours.