Course Description

Instructor: Jerome P. Lynch  
jerlynch@umich.edu.

Lectures: Tuesdays and Thursdays, 8:30 - 10:00 am  
EECS 1311

Office Hours: Fridays, 8:30-9:30am (starting 9/7)  
2105C G. G. Brown Building (Main CEE Office)

Website:  
http://www-personal.umich.edu/~jerlynch/cee572/ [Main Course Website]  
http://leccap.engin.umich.edu/leccap/site/t17lbn4eq4rcf9u54ei [Lectures]

Catalog Description:
This course is an introductory course in the fundamentals of dynamics system theory applied to infrastructure systems including applications in modeling, motoring and controlling structural, transportation, hydraulic, and electrical grid systems. Linear systems are emphasized including continuous-time and discrete-time systems but elementary concepts in nonlinear systems are also presented. Additional topics include feedback control theory, system identification, and cyber-physical system architectures.

Textbook (currently on 4-hour reserve at the AAE Library):

Additional References (currently on 4-hour reserve at the AAE Library):

Course Requirements:
- Regular attendance
- Weekly homework assignments
- Midterm exams (2 exams)

Homework:
Homework will be assigned each Thursday and due the following Thursday in class (unless otherwise noted). **Please note, late homework will not be accepted.** You are allowed to work in small groups, but you must write up your own homework to hand in. Homework will often involve MATLAB programming. Homework will be graded on a scale of 100.

Grading:
Homework 30%, Midterm 30% and Final 40%. These weights are approximate; the right to change them later is reserved (but always to the benefit of the student).

Prerequisites:
Exposure to linear algebra and matrices. You should have seen the following topics: matrices and vectors, (introductory) linear algebra and differential equations. Some preliminary knowledge of MATLAB would be beneficial but not required. Deeper appreciation for the course would be derived from having taken CEE571: *Linear System Theory*.