UNIVERSITY OF MASSACHUSETTS
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

ECE 604 **STATE VARIABLE ANALYSIS** **FALL, 2017**

Class Hours: T-Th 1:00 PM – 2:15 PM
Classroom: Marston 15
Professor: Doug Looze
Office: KEB 113F **Phone:** (413) 545-0973 **email:** looze@ecs.umass.edu
Office Hours: T 4:00 PM - 5:00 PM, W 3:00 – 5:00

Course URL: https://moodle.umass.edu/ (login using OIT ID)
The moodle page contains all the course material to date, including this syllabus, the problem sets, and the lecture notes.

Textbook: Antsaklis, P. J. and A. N. Michel, *A Linear Systems Primer*, Birkhäuser, 2007.

References: Kailath, T., *Linear Systems*, Prentice Hall, 1980.
Wilson J. Rugh, *Linear System Theory*, Prentice-Hall, 1996.
C.-T. Chen, *Linear System Theory and Design*, Oxford, 1999.

Exams: There will be an evening 2-hour midterm exam from 7-9 PM (on Wednesday, November 1) and a take-home final exam due during exam week. Each exam will count as 35% of the final grade. All exams will be open book and open notes.

Homework: There will be approximately 7 homework assignments. **Late homework will not be accepted.** Homework will count as 30% of the final grade.

Prerequisite: Linear Algebra (undergraduate level).

Course Outline

Objectives: Provide a basic understanding of linear systems and the methodologies that are used to analyze and model such systems; provide the necessary background for advanced material in systems, control and communications.

1.	Linear Algebra	3 Lectures
2.	State variable models	3 Lectures
3.	Solution of state variable models	8 Lectures
4.	Controllability and Observability	8 Lectures
5.	Realization	5 Lectures
6.	Internal Stability	5 Lectures
7.	Feedback	5 Lectures