SYST 611: System Methodology & Modeling

Spring 2009
Innovation Hall, room 131
Wednesdays 4:30-7:10pm

Professor: Stephen G. Nash
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Office hours: Monday 2-4pm, and by appointment; via e-mail at other times

Prerequisite: SYST 500

All course materials will be posted at http://courses.gmu.edu

Textbook: *Introduction to Dynamic Systems* by David G. Luenberger (1979)
Software: *Matlab*, either the student version, or via campus computers

Overview: This course provides a broad overview of mathematical models for systems. Topics include system model and behavior analysis, linear and nonlinear systems, discretization and linearization, optimization, dynamic programming and optimal control. The course will cover modeling, the underlying mathematical principles, and software tools for analyzing the resulting models.

Grading:
35% homework (assigned most weeks)
30% midterm
35% final

Tentative Course Outline:

Jan 21	Lecture 1	Chapter 1 of Luenberger
Jan 28	Lecture 2	Chapters 2 and 3
Feb 4	Lecture 3:	Chapter 4
Feb 11	Lecture 4:	Chapter 5, part 1
Feb 18	Lecture 5:	Chapter 5, part 2
Feb 25	Lecture 6:	Chapter 6
Mar 4	Midterm	
Mar 11	[no class]	Spring Break
Mar 18	Lecture 7:	Chapter 7
Mar 25	Lecture 8:	Chapter 8, part 1
Apr 1	Lecture 9:	Chapter 8, part 2
Apr 8	Lecture 10:	Chapter 9
Apr 15	Lecture 11:	Chapter 10
Apr 22	Lecture 12:	Chapter 11
Apr 29	Review session	
May 6	Final exam	