

ELG4152: Modern Control Engineering
Textbook: Modern Control Systems (Ninth Edition) by Richard C. Dorf and Robert H. Bishop, Prentice Hall, 2001.

Assessment: Midterm Exam: 25%
 Final Exam: 50%
 Assignment/Project: 25%

Course Plan:

Date	Lectures	DGD
Week 1	Chapter 1: Introduction to Control Systems Tutorials: E1.1; E1.2; E1.6; E1.7; E1.8; P1.1; P1.2; P1.3; P1.10; P1.21; P1.23; P1.24; DP1.2; DP1.4	The Simulation of Systems Using Matlab: pp. 80-97
Week 2	Chapter 2: Mathematical Models of Dynamic Systems Sections: All Examples: 2.1; 2.2; 2.3; 2.4; 2.5; 2.7; 2.8; 2.9; 2.10; 2.11; 2.13; 2.15 Tutorials: E2.7; E2.9; E2.18; E2.19; E2.22; P2.13.	The Simulation of Systems Using Matlab: pp. 80-97 Report 1: MP2.2; MP2.3; MP2.5 Due: 14:00 (Wed 28, 2004) in the lab.
Week 3 Jan 21/22	Chapter 3: State Variable Models Examples: 3.1; 3.4 Tutorials: E3.1; E3.3; E3.7; E3.8; E3.9; E3.11; E3.12	DGD: E2.18; E2.19; E2.22; E2.30; P2.50; P2.51. Report 1: MP2.2; MP2.3; MP2.5
Week 4	Chapter 3: State Variable Models	Analysis of State Variable Models Using Matlab: Problems (pp. 171-172)
Week 5	Chapter 4: Feedback Control System Characteristics	Control System Characteristics Using Matlab: pp. 196-205; Matlab Problems: pp. 220-221.
Week 6	Chapter 5: The Performance of Feedback Control Systems	System Performance Using Matlab and Simulink: pp. 262-275; Matlab Problems: 287-289.
Week 7	Chapter 7: The Root Locus Method	Root Locus Using Matlab: pp. 373-380; Matlab Problems: p. 404.
Week 8	Chapter 8: The Frequency Response Method	Frequency Response Using Matlab: pp. 439-446; Matlab Problems: p. 466.
Week 9	Chapter 11: The Design of State Variable Feedback Systems	State Variable Design Using Matlab and Simulink: pp. 658-668; Matlab Problems: pp. 677-679.
Week 10	Chapter 11: The Design of State Variable Feedback Systems	State Variable Design Using Matlab and Simulink: pp. 658-668; Matlab Problems: pp. 677-679.
Week 11	Chapter 12: Robust Control Systems	Robust Control Systems Using Matlab: pp. 716-712; Matlab Problems: 741
Week 12	Chapter 12: Robust Control Systems	Robust Control Systems Using Matlab: pp. 716-712; Matlab Problems: 741