

ECE421 Fall 2010

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Textbook: Modern Control Engineering, 5th Edition, K. Ogata, Prentice
Hall, 2010, Chapters 1,2, 5 - 7.

4:30-5:45 Monday and Wednesday, Rm 210 Krug Hall

1. Monday Aug. 30 Introduction 1
2. Wednesday Sept 1 Introduction and Block diagrams 1, 2
3. Wednesday Sept 8 First-order systems 5
4. Monday Sept 13 Block diagrams 2
5. Wednesday Sept 15 Second-order systems 5
6. Monday Sept 20 Second-order systems 5
7. Wednesday Sept 22 Second-order systems 5
8. Monday Sept 27 Types of control actions 5
9. Wednesday Sept 29 Stability analysis with the Routh array 5
10. Monday Oct 4 Steady-state error 5
11. Wednesday Oct 6 Steady-state error 5
12. Tuesday Oct 12 Test 1, Chapters 1, 2, and 5
13. Wednesday Oct 13 Introduction to pole movement, the root locus 6
14. Monday Oct 18 Root locus 6
15. Wednesday Oct 20 Root locus 6
16. Monday Oct 25 Introduction to compensator design 6
17. Wednesday Oct 27 Compensator design using root locus 6
18. Monday Nov 1 Compensator design using root locus 6
19. Wednesday Nov 3 Compensator design using root locus 6
20. Monday Nov 8 Polar plots and the Nyquist stability criterion 7
21. Wednesday Nov 10 Review of Bode plots 7
22. Monday Nov 15 Relative stability, gain and phase margins 7
23. Wednesday Nov 17 Test 2 Chapters 6 and 7
24. Monday Nov 22 Gain and phase margins 7
25. Monday Nov 29 Compensator design using Bode plots, phase lag 7
26. Wednesday Dec 1 Compensator, complete phase lag, begin phase lead 7
27. Monday Dec 6 Compensator design, complete phase lead 7
28. Wednesday Dec 8 Compensator design, phase lead-lag combination 7

Final Exam Wednesday Dec 15, 4:30-7:15

Office Hrs Monday 1:00 to 3:00 and Tuesday 2:45 to 4:15

HOMEWORKS and Due Dates

HOMEWORKS and Due Dates

1. Wednesday Sept 8 B 2.4
2. Wednesday Sept 15 B 2.1, 2.2, 2.3, 5.1
3. Wednesday Sept 22 B 5.2, 5.3, 5.5, 5.9, 5.12, 5.13
4. Wednesday Sept 29 B 5.15, 5.20, 5.21, 5.22, 5.23, 5.24
5. Wednesday Oct 6 B 5.26, 5.27, 5.28
6. Wednesday Oct 13 B 6.1, 6.2, 6.5, 6.6
7. Wednesday Oct 20 B 6.11, 6.12a, 6.14, 6.18
8. Wednesday Oct 27 B 6.19, 6.20
9. Wednesday Nov 3 B 6.21, 6.23, 6.28
10. Wednesday Nov 10 B 7.16, 7.18, 7.24, 7.25
11. Wednesday Nov 17 B 7.31, 7.34
12. Wednesday Dec 1 B 7.33, 7.34

For project assignments, go to ece.gmu.edu, then click on people, faculty by name, then click on Guy Beale under faculty emiriti, then syllabi from previous semesters, then Spring '06, ECE421, finally projects.

Important Dates

Tuesday Oct 12 Test 1
Monday, Oct 25 Project 1
Wednesday, Nov 17, Test 2
Wednesday Dec 1, Project 2
Wednesday Dec 15, 4:30-7:15 Final Exam

Grading

Test 1	25%
Test 2	25%
Homework	10%
Project 1	5%
Project 2	5%
Exam	30%