ECE421 Fall 2011

Dr. Gerald Cook Rm 3207 Nguyen Engineering Building
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Textbook: Modern Control Engineering, 5th Edition, K. Ogata, Prentice Hall, 2010, Chapters 1,2, 5 - 7.

3:00-4:15 Tuesday and Thursday, Rm 1103 Nguyen Engineering Building

1. Tuesday Aug. 30 Introduction 1
2. Thursday Sept 1 Introduction and Block diagrams 1, 2
3. Tuesday Sept 6 First-order systems 5
4. Thursday Sept 8 Block diagrams 2
5. Tuesday Sept 13 Second-order systems 5
6. Thursday Sept 15 Second-order systems 5
7. Tuesday Sept 20 Second-order systems 5
8. Thursday Sept 22 Types of control actions 5
9. Tuesday Sept 27 Stability analysis with the Routh array 5
10. Thursday Sept 29 Steady-state error 5
11. Tuesday Oct 4 Steady-state error 5
12. Thursday Oct 6 Test 1, Chapters 1, 2, and 5
13. Thursday Oct 13 Introduction to pole movement, the root locus 6
14. Tuesday Oct 18 Root locus 6
15. Thursday Oct 20 Root locus 6
16. Tuesday Oct 25 Introduction to compensator design 6
17. Thursday Oct 27 Compensator design using root locus 6
18. Tuesday Nov 1 Compensator design using root locus6
19. Thursday Nov 3 Compensator design using root locus 6
20. Tuesday Nov 8 Polar plots and the Nyquist stability criterion 7
21. Thursday Nov 10 Review of Bode plots 7
22. Tuesday Nov 15 Test 2 Chapters 6 and 7
23. Thursday Nov 17 Relative stability, gain and phase margins 7
24. Tuesday Nov 22 Gain and phase margins 7
25. Tuesday Nov 29 Compensator design using Bode plots, phase lag 7
26. Thursday Dec 1 Compensator, complete phase lag, begin phase lead 7
27. Tuesday Dec 6 Compensator design, complete phase lead 7
28. Thursday Dec 8 Compensator design, phase lead-lag combination 7

Final Exam Thursday Dec 15, 1:30 to 4:15 pm,
Office Hrs Monday 2:45 to 4:15 and Tuesday 1:15 to 2:15

HOMEWORKS and Due Dates

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

Project assignments will be emailed to the class as well as being posted on the class website.

Important Dates

Thursday Oct 6 Test 1
Tuesday, Oct 25 Project 1 due
Tuesday, Nov 15 Test 2
Thursday Dec 1 Project 2 due
Thursday Dec 15 Final Exam

Grading

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