ECE421 Spring 2015

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

10:30-11:45 Monday -Wednesday, AB Rm 2003

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

Final Exam Wednesday May 6, 10:30am to 1:15 pm,
Office Hrs Tuesday 3 to 4pm and Wednesday 1 to 3pm

HOMEWORKS and Due Dates

1. Wednesday Jan 28 B 2.4
2. Wednesday Feb 4 B 2.1, 2.2, 2.3, 5.1
3. Wednesday Feb 11 B 5.2, 5.3, 5.5, 5.9, 5.12, 5.13
4. Wednesday Feb 18 B 5.15, 5.20, 5.21, 5.22, 5.23, 5.24
5. Wednesday Feb 25 B 5.26, 5.27, 5.28
6. Wednesday Mar 4 B 6.1, 6.2, 6.5, 6.6
7. Wednesday Mar 18 B 6.11, 6.12a, 6.14, 6.18
8. Wednesday Mar 25 B 6.19, 6.20
9. Wednesday Apr 1 B 6.21, 6.23, 6.28
10. Wednesday Apr 8 B 7.016, 7.18, 7.24, 7.25
11. Wednesday Apr 15 B 7.31, 7.34
12. Wednesday Apr 22 B 7.33

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

Important Dates

Monday Mar 2, Test 1
Thursday, Mar16, Project 1 due
Monday, Apr 13, Test 2
Monday Apr 27 , Project 2 due
Wednesday May 6, Final Exam 10:30am-1:15pm

Grading

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