

ECE421 Spring 2016

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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, East Rm 201

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

Final Exam Wednesday May 4, 10:30am to 1:15 pm,

Office Hrs Monday 3 to 4pm and Wednesday 1 to 3pm

HOMEWORKS and Due Dates

1. Wednesday Jan 27 B 2.4
2. Wednesday Feb 3 B 2.1, 2.2, 2.3, 5.1
3. Wednesday Feb 10 B 5.2, 5.3, 5.5, 5.9, 5.12, 5.13
4. Wednesday Feb 17 B 5.15, 5.20, 5.21, 5.22, 5.23, 5.24
5. Wednesday Feb 24 B 5.26, 5.27, 5.28
6. Wednesday Mar 2 B 6.1, 6.2, 6.5, 6.6
7. Wednesday Mar 16 B 6.11, 6.12a, 6.14, 6.18
8. Wednesday Mar 23 B 6.19, 6.20
9. Wednesday Mar 30, B 6.23, 6.28
10. Wednesday Apr 6, B 7.016, 7.18, 7.24, 7.25
11. Wednesday Apr 13, B 7.31, 7.34
12. Wednesday Apr 20, B 7.33

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

Important Dates

Monday Feb 29, Test 1

Monday, Mar14, Project 1 due

Monday, Apr 11, Test 2

Monday Apr 25 , Project 2 due

Wednesday May 4, Final Exam 10:30am-1:15pm

Grading

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