

ECE421 Spring 2010

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

9:00-10:15 Tuesday and Thursday, Rm 2 Lecture Hall

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

Final Exam Tuesday May 11, 7:30am to 10:15 am, Office Hrs Monday
2:45 to 4:15 and Thursday 1:00 to 3:00

HOMEWORKS and Due Dates

1. Tuesday Jan 26 B 2.4
2. Tuesday Feb 2 B 2.1, 2.2, 2.3, 5.1
3. Tuesday Feb 9 B 5.2, 5.3, 5.5, 5.9, 5.12, 5.13
4. Tuesday Feb 16 B 5.15, 5.20, 5.21, 5.22, 5.23, 5.24
5. Tuesday Feb 23 B 5.26, 5.27, 5.28
6. Thursday Mar 4 B 6.1, 6.2, 6.5, 6.6
7. Thursday Mar 18 B 6.11, 6.12a, 6.14, 6.18
8. Thursday Mar 25 B 6.19, 6.20
9. Thursday April 1 B 6.21, 6.23, 6.28
10. Tuesday April 13 B 7.16, 7.18, 7.24, 7.25
11. Tuesday April 20 B 7.31, 7.34
12. Tuesday April 27 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

Thursday Feb 25 Test 1
Thursday, Mar 18 Project 1
Thursday, Apr 8, Test 2
Thursday April 29, Project 2
Tuesday May 11, Final Exam

Grading

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