SYST 421/ ECE421 Spring 2008

Dr. Gerald Cook, Room 255 ST II, gcook@gmu.edu (703) 993-1699
Textbook: Modern Control Engineering, 4th Edition, K. Ogata, Prentice Hall, 2002, Chapters 1, 3, 5 – 9.

9:00-10:45 Tuesday and Thursday, Room 138, Thompson Hall

1. Tuesday Jan. 22 Introduction 1
2. Thursday Jan. 24 Introduction and Block diagrams 1, 3
3. Tuesday Jan 29 First-order systems 5
4. Thursday Jan 31 Block diagrams 3
5. Tuesday Feb 5 Second-order systems 5
6. Thursday Feb 7 Second-order systems 5
7. Tuesday Feb 12 Second-order systems 5
8. Thursday Feb 14 Types of control actions (material not on Test 1) 5
9. Tuesday Feb 19 Stability analysis with the Routh array 5
10. Thursday Feb 21 Steady-state error 5
11. Tuesday Feb 26 Steady-state error 5
12. Thursday Feb 28 Introduction to pole movement, the root locus 6
13. Tuesday Mar 4 Test 1, Chapters 1, 3, and 5
14. Thursday Mar 6 Root locus 6
15. Tuesday Mar 18 Root locus 6
16. Thursday Mar 20 Introduction to compensator design 7
17. Tuesday Mar 25 Compensator design using root locus 7
18. Thursday Mar 27 Compensator design using root locus7
19. Tuesday Apr 1 Compensator design using root locus 7
20. Thursday Apr 3 Polar plots and the Nyquist stability criterion 8
21. Tuesday Apr 8 Review of Bode plots 8
22. Thursday Apr 10 Relative stability, gain and phase margins 8
23. Tuesday Apr 15 Test 2 Chapters 6,7 and 8
24. Thursday Apr 17 Gain and phase margins 8
25. Tuesday Apr 22 Compensator design using Bode plots, phase lag 9
26. Thursday Apr 24 Compensator design using phase lag and lead 9
27. Tuesday Apr 29 Compensator design using Bode plots, phase lead 9
28. Thursday May 1 Compensator design using Bode plots, lag-lead 9
Tuesday May 13 Final Exam, comprehensive, Chaps. 7, 8, 9 emphasized

HOMEWORKS

Go to ece.gmu.edu, then click on undergraduate courses, then click on course web pages. Click on ECE421 (use the Spring 07 posting until the new page has been entered). Correct due dates for this semester are given below.

- **HW #1: Date Due:** Tuesday, Jan 29
- **HW #2: Date Due:** Tuesday, Feb 5
- **HW #3: Date Due:** Tuesday, Feb 12
- **HW #4: Date Due:** Tuesday, Feb 19
- **HW #5: Date Due:** Tuesday, Feb 26
- **HW #6: Date Due:** Thursday, Mar 6
- **HW #7 Date Due:** Thursday, Mar 20
- **HW #8: Date Due:** Thursday, Mar 27
- **HW #9: Date Due:** Thursday, Apr 3
- **HW #10 Date Due:** Thursday, Apr 10
- **HW #11: Date Due:** Thursday, Apr 17
- **HW #12: Date Due:** Thursday, Apr 24
- **HW #13: Date Due:** Thursday, May 1

Important Dates

Thursday Mar 4 Test 1
Thursday, Mar 6 Project 1 due
Thursday, Apr 15, Test 2
Tuesday Apr 29, Project 2 due
Tuesday May 13, Final Exam

Grading

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