

EE3CL4: Tentative Timetable 2012

Week	Date	Lecture Group	Key Sections (12th edition)	Topics	Lab	Tutorial
1	02-Jan					
	03-Jan	Introduciton	1.1,1.3,1.5,1.8,1.9 1.10	Introduction & Organization, including intro to disk drive		
	05-Jan	System Models	2.2 2.3 2.4	Differential equations Linear approximations Laplace transforms		
	06-Jan		2.4	Laplace transforms		
2	09-Jan					M-S-D system
	10-Jan		2.5	Transfer functions, step response		
	12-Jan		2.10	Intro to Armature Controlled Motor		
	13-Jan		2.6	Block diagrams, examples		
3	16-Jan					Loop transfer fns
	17-Jan	Feedback	4.2,4.3,4.4,4.6,4.7	Characteristics of Feedback open loop, closed loop, Stability, Loopshaping, robustness		
	19-Jan			Open loop vs closed loop		
	20-Jan		5.2, 5.3,5.5	Step response of second order system		
4	23-Jan				Lab 1: System ID Groups L01-L05	Step resp of prop. controlled servo motor
	24-Jan		5.5	Pole positions and transient perf.		
	26-Jan		5.6	Steady-state error		
	27-Jan	Routh Hurwitz	6.1 6.2	Stability (details) Routh Hurwitz		
5	30-Jan				Lab 1: System ID Groups L06-L10	Pole placement Camera example
	31-Jan		6.2,6.3, 6.7	Routh Hurwitz		
	02-Feb		6.2	Routh Hurwitz, zero rows		
	03-Feb	Root Locus	6.5 7.2 7.3	Routh Hurwitz for design Root locus concept, simple 2nd order example Root locus procedure, steps 1 and 2		
6	06-Feb				Lab 2: Root locus and proportional control Groups L01-L05	Routh Hurwitz
	07-Feb		7.3	Root locus procedure, steps 3 and 4		
	09-Feb			Root locus procedure, VTOL example		
	10-Feb		7.3	Root locus procedure, steps 5, 6, 7		
7	13-Feb				Lab 2: Root locus and proportional control Groups L06-L10	Routh Hurwitz with zero row or root locus
	14-Feb		7.4 7.7	Root Locus: Parameter design Negative root locus		
	16-Feb	Lead/Lag RL	10.3,10.5	Lead Compensators		
	17-Feb			Design of Lead Comp. by Root Locus		
Read. Week						
8	27-Feb				No labs this week (due to midterm)	Root locus
	28-Feb			Revision for Midterm		
	29-Feb			Midterm Test, 7:00-8:30pm		
	01-Mar		10.3,10.5 10.3, 10.7	Lead compensators, review Lag Compensators Design of Lag Comp. by Root Locus incl. steady state errors		
02-Mar			Compensator design by Root Locus, cont SISO tool?			
9	05-Mar				Lab3: Phase lead control Groups L06-L10	Lead control design by root locus
	06-Mar	PID	7.6	Intro to PID Design		
	08-Mar	Freq domain	8.1	Frequency response		
	09-Mar		8.2 8.2, 10.3	Polar and Bode plots Bode diagrams, incl. lead/lag		
10	12-Mar				Lab3: Phase lead control Groups L01-L05	Lag control design by root locus
	13-Mar		9.2	Mappings		
	15-Mar		9.2, 9.3	Towards Nyquist's criterion		
	16-Mar		9.3	Nyquist's criterion		

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11	19-Mar				Lab 4: Phase lag control Groups L06-L10	Freq resp. plots, Bode & Polar
	20-Mar		9.4, 9.5	Nyquist: relative stability, transient resp.		
	22-Mar	Lead/Lag Bode	10.4	Lead Compensator Design via Bode		
	23-Mar		10.8	Lag compensator design via Bode		
12	26-Mar				Lab 4: Phase lag control Groups L01-L05	Nyquist dias
	27-Mar			<i>To be decided</i>		
	29-Mar			<i>To be decided</i>		
	30-Mar			<i>To be decided</i>		
13	02-Apr					Bode-based lead and/or lag design
	03-Apr			Review		