

# Calendar – Fall 2009 - 2010

## ES205 Analysis and Design of Engineering Systems

class	day	date	topics	hw	due
01	F	4 Sept	Introduction, modeling, springs	Le01/HW1	
02	M	7 Sept	Springs and dampers	Le02/HW2	
03	W	9 Sept	Gears, standard model forms	Le03/HW2	HW1
04	F	11 Sept	Mechanical systems problems	Le04/HW2	
05	M	14 Sept	Mechanical systems problems	Le05/HW3	
06	W	16 Sept	RLC circuits and Op-amps (review)	Le06/HW3	HW2
07	F	18 Sept	Electrical systems	Le07/HW3	
08	M	21 Sept	DC motors, armature-controlled	Le08/HW4	
09	W	23 Sept	DC motors, field controlled	Le08/HW4	HW3
10	F	25 Sept	Review Problems	Le09/HW5	HW4
11	M	28 Sept	<b>Exam 1 (Le 1-11)</b>		
12	W	30 Sept	Solving DEs with Matlab and Maple	LE 12/HW5	
13	F	2 Oct	Time response of 1st- and 2nd-order systems	Le13/HW5	
14	M	5 Oct	Performance Specifications	Le14/HW6	
15	W	7 Oct	Tank draining problems	Le15/HW6	HW5
16	F	9 Oct	Tank Draining	Le16/HW6	
17	M	12 Oct	Convection, conduction, and radiation	Le17/HW7	
18	W	14 Oct	Thermal capacitance and lumped parameters	Le18/HW7	HW6
		15-16 Oct	<b>Fall Break</b>		
19	M	19 Oct	Log incomplete response and system ID	Le19/HW7	
20	W	21 Oct	Introduction to frequency response	Le20/HW8	
21	F	23 Oct	Frequency response	Le21/HW8	HW7
22	M	26 Oct	Review problems		HW8

<b>class</b>	<b>day</b>	<b>date</b>	<b>topics</b>	<b>hw</b>	<b>due</b>
<b>23</b>	W	28 Oct	<b>Exam 2</b>		
<b>24</b>	F	30 Oct	Frequency response, sketching	Le24/HW9	
<b>25</b>	M	2 Nov	Frequency response, sketching	Le25/HW9	
<b>26</b>	W	4 Nov	Frequency response	Le26/HW10	
<b>27</b>	F	6 Nov	Feedback Controls	Le27/HW10	HW9
<b>28</b>	M	9 Nov	Feedback Controls	Le28/HW10	
<b>29</b>	W	11 Nov	Combination problems		
<b>30</b>	F	13 Nov	Review		HW10
		TBD	<b>Final Exam</b>		

Lab

<b>Lab 1</b>			Block diagrams and simulation diagrams Simulink tutorial		Lab1 wksht
<b>Lab 2</b>			Module: Introduction to model characteristics Module: Matlab tutorial		Lab2 wksht
<b>Lab 3</b>			Module: Team rating exercise Lab: System identification (in controls lab)		
<b>Lab 4</b>			Module: Guidelines for technical writing Lab: Model and simulate a DC motor-generator set		
<b>Lab 5</b>			Work on write-ups for lab 3 and 4		
<b>Lab 6</b>			Lab: Tank-draining experiment Team citizenship ratings		Lab 3 and 4
<b>Lab 7</b>			Thermocouple parameter identification		Lab7 wksht
<b>Lab 8</b>			Module: Oral presentations Lab: Frequency response using Matlab		Lab6 report Lab8 wksht
<b>Lab 9</b>			Mass-Spring system frequency response (in controls lab)		Lab9 wksht
<b>Lab 10</b>			Oral presentations Team citizenship ratings, course evaluations		Oral presentations