

AME341bL: Mechoptronics Laboratory II

v1 12/14/16

Textbooks: (optional) *Introduction to Mechatronics and Measurement Systems*, Alciatore & Histan (2011) McGraw-Hill.
 (optional) *Theory and Design for Mechanical Measurements*, Figliola & Beasley (2010) Wiley.
 (optional) *The Art of Electronics*, Horowitz & Hill (1989) Cambridge University Press.

Lecture: MWF 8-8:50 or 9-9:50 **ZHS 159**

Lab: M, T, W or Th 2-4:50 **BHE 301**

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Wk	Date	Lecture	Lab	Assn. Due	%
1	M 1/9	(1) Introduction	E9: LabVIEW I – Basics		
	W 1/11	(2) 2 nd Order Systems I			
2	M 1/16	MLK Day	No Lab.		
	W 1/18	(3) Strain Gauges			
	F 1/20	(4) Wheatstone Bridge			
3	M 1/23	(5) 2 nd Order Systems II	E10: Strain gauges/Vibrating Beams	A9	2
	W 1/25	(6) Turbulence, Jets and Plumes			
4	M 1/30	(7) Dynamic Pressure	E11: Turbulent Jets I	A10 <i>Report</i>	10
	W 2/1	(8) Thermocouples			
	F 2/3	(9) A10 recap			
5	M 2/6	(10) Convective Heat Transfer	E12: Thermocouples/Heat Transfer	A11 <i>Spreadsheet</i>	10
	W 2/8	(11) Junior Project Proposal (JPP) Info			
	F 2/10	(12) A11 recap			
6	M 2/13	(13) Lab View I / Electric Motors	E13: LabVIEW II – Motor Control	JPP <i>(due Friday)</i>	4
	W 2/15	(14) Lab View II / JPP discussion			
7	M 2/20	President's Day	No Lab but ... MiniTalk from E12	A12 <i>MiniTalk</i>	10
	W 2/22	(15) Quiz Preview			
	F 2/24	(16) A12 Recap			
8	M 2/27	(17) More on Turbulent Jets	E14: Turbulent Jets 1.5	A13b TQ	2 15
	W 3/1	Terror Quiz			
	F 3/3	(18) Terror Quiz Post-Mortem			
9	M 3/6	No lecture – plan E15 in lab	E15: Junior Design Project	A14	4
	W 3/8	(19) How to present for AME-341/E15			
10	M 3/13	SPRING BREAK	No Lab.		
	W 3/15				
11	M 3/20	(20) Thermal Controls I	SE1		
	W 3/22	(21) Thermal Controls II			
12	M 3/27	(22) Compressible Flows	Presentation from E15	A15 <i>Talk</i>	12
	W 3/29	(23) Shock Tube Measurements			
	F 3/31	(24) A15 recap			
13	M 4/3	(25) SE-RPT & SE-SS Details	SE1 & SE2	(SE1)	
	W 4/5	(26) Optics I - Basics			
14	M 4/10	(27) Optics II – Digital Optics	SE2 & SE3	(SE1,2)	12
	W 4/12	(28) Something Fascinating I			
15	M 4/17	(29) AME 441 - I	SE3 Sign-up for SE-SS	(SE2,3)	
	W 4/19	(30) AME 441 - II			
16	M 4/24	Something Fascinating II	SE Spreadsheet Presentation (SE-SS)	SE-SS 441-Piazza	12 2
	W 4/26	Grad School (9am section only)			

- 5% of the total grade will be determined by a Performance Measure compiled by staff over the whole semester. It includes all aspects of engagement in lectures, labs, the discussion board and office hours.
- The last three Special Experiments (SE1, SE2 and SE3) are run for two weeks each. There will be sign-up sheets for each Special Experiment. Each student must complete at least 2 of the 3 Special Experiments.
- A full written report (SE-RPT) worth 12% of course grade is required for one of the Special Experiments and is due one week after the experiment is performed.
- A presentation with data analysis demonstration (SE-SS, also 12%) is required for the other Special Experiment and is given in a 10- minute timeslot on your regular lab day during the last week of classes.