Tentative Course Syllabus
ME 313: Heat Transfer

Revised 1-14-11

Instructor: Dr. Duane L. Abata, Professor of Mechanical Engineering
Textbook: Heat and Mass Transfer: A Practical Approach; Cengel, 4rd Ed.

	day	date	read before class	homework due
1	F	Jan 14	introduction	
	M	Jan 17	Martin Luther King Day (no class)	
2	W	Jan 19	conduction, convection, radiation §1-1 to 1-9	1-22, 1-28, 1-56
3	F	Jan 21	one dimensional heat conduction §2-1 to 2-2	2-16, 2-32 (derivation)
4	M	Jan 24	general equation, boundary conditions §2-3 to 2-4	2-59, 2-61
5	W	Jan 26	solutions, heat generation, variable K §2-5 to 2-7	2-64, 2-85
6	F	Jan 28	steady state, resistance, networks §3-1 to 3-3	3-17, 3-19, 3-20
7	M	Jan 31	cylinders, spheres §3-4 to 3-5	3-31E, 3-61, 3-76
8	W	Feb 2	fins §3-6	3-114, 3-124E
9	F	Feb 4	transient, lumped analysis §4-1	4-15, 4-25
10	M	Feb 7	§4-2 to 4-4 with emphasis on 4-2	4-43, 4-47 (in class)
11	W	Feb 9	review	1-18, 3-63, 3-129
12	F	Feb 11	first hour exam	
13	M	Feb 14	exam discussion and intro to numerical methods §5-1 to 5-4	
14	W	Feb 16	transient §5-5	5-7 (in class), 5-8, 5-10
15	F	Feb 18	convection §6-1 to 6-4	6-8, 6-9
	M	Feb 21	President's Day (no class)	
16	W	Feb 23	lam and turb flow §6-5 to 6-6; skim §6-8 to 6-11	6-13, 6-63, 6-66
17	F	Feb 25	external forced convection §7-1 to 7-2	7-16, 7-18
18	M	Feb 28	cylinders, spheres, tube banks §7-3 to 7-4	7-61, 7-85
19	W	Mar 2	review	5-24 (set up only), 7-20 a,b
20	F	Mar 4	second hour exam	
	M	Mar 7	Spring break (no class)	
	W	Mar 9	Spring break (no class)	
	F	Mar 11	Spring break (no class)	
21	M	Mar 14	exam discussion	
22	W	Mar 16	internal forced convection §8-1 to 8-4	
23	F	Mar 18	laminar flow in tubes §8-5	8-19, 8-20
24	M	Mar 21	turbulent flow in tubes §8-6	8-34, 8-38
25	W	Mar 23	natural convection introduction	8-62, 9-13a,c
26	F	Mar 25	grashof numbers, various surfaces §9-1 to 9-3	9-18, 9-25
27	M	Mar 28	§9-4 to 9-5	9-27a,b 9-54
28	W	Mar 30	review	8-39a, 8-48, 9-21

29	F	Apr 1	third hour exam	
30	M	Apr 4	exam discussion	
31	W	Apr 6	Design Applications	
32	F	Apr 8	Design Applications	
33	M	Apr 11	radiation, blackbody radiation §12-1 to 12-3	12-24, 12-28
34	W	Apr 13	radiation, blackbody radiation §12-1 to 12-3	12-40, 12-44 (both problems in class)
35	F	Apr 15	radiation intensity and properties §12-4 to 12-5	12-60, 12-73
36	M	Apr 18	view factors §13-1 to 13-3	12-85, 12-104
37	W	Apr 20	gray surfaces§13-4	13-16a,b; 13-27
38	F	Apr 22	Easter (no class)	
39	M	Apr 25	Easter (no class)	
40	W	Apr 27	simple shields §13-5	
41	F	Apr 29	review	12-27, 13-52, 13-141, and all exam problems –bring your exams with you to class!
	M	May 2	begin FINAL EXAM WEEK	