

**ME EN 3650 / CH EN 3453 – Heat Transfer
Summer 2024 Schedule**

Week	Class #	Date	Day	Topics	Sections to read in the textbook	HW due (Class #)	Quiz # due
1	1	May 14	Tu	Introduction, rate equations, conservation of energy	1.1 – 1.6		
	2	May 16	Th	Conduction rate equation, thermal properties, heat diffusion equation, boundary and initial conditions	2.1 – 2.4		
2	3	May 21	Tu	1D steady-state conduction (plane wall), thermal circuit analysis, radial systems	3.1 – 3.4	1, 2	A, 0, 1, 2
	4	May 23	Th	Thermal energy generation, extended surfaces	3.5 – 3.6		
3	5	May 28	Tu	2D steady-state conduction, finite-difference equations	4.1 – 4.4	3, 4	3, 4
	6	May 30	Th	Finite-difference solutions, transient conduction (lumped capacitance)	4.5, 5.1-5.3		
4	7	June 4	Tu	Transient conduction – spatial effects, semi-infinite solid	5.4 – 5.8	5, 6	TBD
	8	June 6	Th	Transient finite difference methods, <i>review</i>	5.10		
5	9	June 11	Tu	Introduction to convection, boundary layer equations	6.1 – 6.5	7, 8	TBD
	10	June 13	Th	Mid-Term Exam 1 (Chapters 1 to 5)			
6	11	June 18	Tu	Boundary layer analogies, external flow, flat plate	6.6 – 6.7, 7.1 – 7.2	9	TBD
	12	June 20	Th	Cylinder and sphere in cross flow	7.3 – 7.5		
7	13	June 25	Tu	Internal flow, circular tubes, turbulent flow	8.1 – 8.5	11, 12	TBD
	14	June 27	Th	Correlations, free convection fundamentals	8.6 – 8.8, 9.1 – 9.4		
8	15	July 2	Tu	Heat exchangers, LMTD, NTU, design	11.1 – 11.5	13, 14	TBD
	16	July 4	Th	No Class			
9	17	July 9	Tu	<i>Review</i>		15	TBD
	18	July 11	Th	Mid-Term Exam 2 (Chapters 6-8,11)			
10	19	July 16	Tu	Introduction to thermal radiation, solid angle, blackbody radiation	12.1 – 12.5		TBD
	20	July 18	Th	Kirchhoff's law, gray surface	12.6 – 12.8		
11	21	July 23	Tu	View factors, blackbody radiation exchange	13.1 – 13.2	19, 20	TBD
	22	July 25	Th	Opaque, diffuse, gray surfaces	13.3		
12	23	July 30	Tu	<i>Final review</i>		21, 22	TBD
	24	Aug 1	Th	Final Exam (Chapters 12-13, Comprehensive)	12:30 PM – 2:30 PM (tentative)		

Homework is due Tuesdays at 11:59 PM. Quizzes are due Fridays at 11:59 PM.