CALIFORNIA STATE POLYTECHNIC UNIVERSITY
Mechanical Engineering Department

ME 4150, HEAT TRANSFER
Course Syllabus
Spring 2022

TEXT: Fundamentals of Heat Transfer, Bergman & Levine, 8th ed., ebook
COURSE PREREQUISITES: C or better in MAT 216 or MAT 234 or C or better in MAT 2240 and ME 3121

DATE	TEXT	TOPIC	VIDEO LECTURES
1/24 M	1.1-1.7	Introduction to Heat Transfer	Lecture 01
1/26 W	1.1-1.7	Modes of Heat Transfer	Lecture 01
1/28 F	1.1-1.7	Control Volume Equations	Lecture 01
1/31 M	1.3-1.7	Control Volume Equations	Lecture 01
2/2 W	2.1-2.2	Conduction Heat Transfer	Lecture 02
2/4 F	2.3	Heat Diffusion Equation	Lecture 03
2/7 M	3.1	1D Conduction	Lecture 04
2/9 W	3.3-3.4	Radial Conduction	Lecture 05
2/11 F	3.6	Extended Surfaces	Lecture o6
2/14 M	3.6	Fin Analysis	Lecture 07
2/16 W	3.6	Fin Efficiency	Lecture 07
2/18 F	4.1-4.2	2D Conduction	Lecture 08
2/21 M	4.3	Conduction Shape Factor	Lecture 09
2/23 W	4.4-4.6	Finite Difference Equations	Lecture 09
2/25 F		**1st Exam**	
2/28 M	5.1	Transient Conduction	Lecture 10
3/2 W	5.2	Lumped Heat Capacity Model	Lecture 11
3/4 F	5.4-5.5	Spatial Effects	Lecture 11
3/7 M	12.1-12.2	Radiation Heat Transfer	Lecture 12
3/9 W	12.3-12.4	Blackbody Radiation	Lecture 12
3/11 F	12.5	Real Surfaces	Lecture 13
3/14 M	12.6	Surface Properties	Lecture 13
3/16 W	13.1	Radiation View Factors	Lecture 14
3/18 F	13.1	Radiation View Factors	Lecture 14

3/21	M	13.2	Blackbody Exchange	Lecture 15
3/23	W	13.3	Grey Surface Exchange	Lecture 16
3/25	F		**2nd Exam**	
3/28	M		**Academic Holiday**	
3/30	W		**Academic Holiday**	
4/1	F		**Academic Holiday**	
4/4	M	6.1-6.3	Convection Heat Transfer	Lecture 18
4/6	W	7.1	External Flows	Lecture 18
4/8	F	7.2	Laminar Flat Plate Flow	Lecture 19
4/11	M	7.2	Turbulent Flat Plate Flow	Lecture 19
4/13	W	7.2	Mixed Flat Plate Flow	Lecture 19
4/15	F	7.3-7.4	Flow Over Cylinders	Lectures 20 & 21
4/18	M	8.1-8.2	Internal Flows	Lecture 22
4/20	W	8.3	Tube Energy Balance	Lecture 23
4/22	F	8.4	Laminar Tube Flow	Lecture 24
4/25	M	8.5	Turbulent Tube Flow	Lecture 24
4/27	W	8.7	Heat Transfer Enhancement	Lecture 24
4/29	F		**3rd Exam**	
5/2	M	9.1-9.3	Free Convection Heat Transfer	
5/4	W	9.4	Vertical Surfaces	
5/6	F	9.5	Turbulence Effects	
5.9	M	9.6	Empirical Correlations	
5/11	W		HT in Everyday Experiences	Lecture 25
5/13	F		Course Review	Lecture 26

Final Exams: Section 1, Monday, May 16, 7:00 to 8:50 am
Section 2, Wednesday, May 18, 9:00 to 10:50 am
Section 3, Friday, May 20, 9:00 to 10:50 am

Instructor: Prof. John R. Biddle, PhD
Office: 98 C3-9

Office Hours: MWF: 11:00 am to 12 noon

Please contact the instructor for other possible meeting times if you are not available at these scheduled office hours

Office Phone: (909) 869-2589

E-mail: **jrbiddle@cpp.edu**

Class attendance is highly recommended.

Please check the course Canvas web-site often for updated course information.

Exam attendance is required (no make-up exams will be given).

Turn off and put away cellphones during class and tests.

Homework should be done on 8 1/2 x 11 engineering green paper or equivalent (**single sided**)

Ten homework sets will be turned in for grading. Homework counts 10% of your course grade. Each HW set will therefore count as 1% of your course grade. Homework will be due at instructor specified dates. See the Homework Policy document passed out by the instructor for the homework problems to be turned in for grading, the answers and due dates. Only select problems from the homework set will be graded.

Final course grades will be determined by the instructor using a modified curve system.
A 90-100, B 80-90, C 70-80, C- 65-70, D 60-65, F < 60

COURSE EVALUATION:	1st Exam	20%
	2nd Exam	20%
	3rd Exam	20%
	Final Exam	30%
	Homework	10%
	TOTAL	100%

THE DROP POLICY for the COLLEGE OF ENGINEERING is at
www.csupomona.edu/~engineering/student/student_questions.html .