

**CALIFORNIA STATE POLYTECHNIC UNIVERSITY**  
**Mechanical Engineering Department**

**ME 4150, HEAT TRANSFER**  
**Course Syllabus**  
**Spring 2020**

**TEXT:** Introduction to Heat Transfer, Bergman & Levine, 6<sup>th</sup> ed.

**COURSE PREREQUISITES:** C or better in MAT 216 or MAT 234 or C- or better in MAT 2240 and ME 3121

<u>DATE</u>	<u>TEXT</u>	<u>TOPIC</u>
1/22 W	1.1	Introduction to Heat Transfer
1/24 F	1.2	Modes of Heat Transfer
1/27 M	1.3-1.7	Control Volume Equations
1/39 W	2.1-2.2	Conduction Heat Transfer
1/31 F	2.3	Heat Diffusion Equation
2/3 M	3.1	1D Conduction
2/5 W	3.3-3.4	Radial Conduction
2/7 F	3.6	Extended Surfaces
2/10 M	3.6	Fin Analysis
2/12 W	3.6	Fin Efficiency
2/14 F	4.1-4.2	2D Conduction
2/17 M	4.3	Conduction Shape Factor
2/19 W	4.4-4.6	Finite Difference Equations
2/21 F		<b>1<sup>st</sup> Exam</b>
2/24 M	5.1	Transient Conduction
2/26 W	5.2	Lumped Heat Capacity Model
2/28 F	5.4-5.5	Spatial Effects
3/2 M	12.1-12.2	Radiation Heat Transfer
3/4 W	12.3-12.4	Blackbody Radiation
3/6 F	12.5	Real Surfaces
3/9 M	12.6	Surface Properties
3/11 W	13.1	Radiation View Factors
3/13 F	13.1	Radiation View Factors

3/16	M	13.2	Blackbody Exchange
3/18	W	13.3	Grey Surface Exchange
3/20	F	6.1-6.3	Convection Heat Transfer
3/23	M		<b>2<sup>nd</sup> Exam</b>
3/25	W	7.1	External Flows
3/27	F	7.2	Laminar Flat Plate Flow
3/30	M		<b>Academic Holiday</b>
4/1	W		<b>Academic Holiday</b>
4/3	F		<b>Academic Holiday</b>
4/6	M	7.2	Turbulent Flat Plate Flow
4/8	W	7.2	Mixed Flat Plate Flow
4/10	F	7.3-7.4	Flow Over Cylinders
4/13	M	8.1-8.2	Internal Flows
4/15	W	8.3	Tube Energy Balance
4/17	F	8.4	Laminar Tube Flow
4/20	M	8.5	Turbulent Tube Flow
4/22	W	8.7	Tube Heat Transfer Enhancement
4/24	F		<b>3<sup>rd</sup> Exam</b>
4/27	M	9.1-9.3	Free Convection Heat Transfer
4/29	W	9.4	Vertical Surfaces
5/1	F	9.5	Turbulence Effects
5.4	M	9.6	Empirical Correlations
5/6	W		Heat Transfer in Everyday Experiences
5/8	F		Course Review

**Final Exams: Section 1, Monday, May 11, 7:00 to 8:50 am**  
**Section 2, Wednesday, May 13, 9:00 to 10:50 am**  
**Section 3, Friday, May 15, 9:00 to 10:50 am**

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

Office Hours: MW: 11:00 am to 1:00 pm

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](mailto:jrbiddle@cpp.edu)

Class attendance is highly recommended.

Please check the course Blackboard 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 and on BlackBoard 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:	1 <sup>st</sup> Exam	20%
	2 <sup>nd</sup> Exam	20%
	3 <sup>rd</sup> Exam	20%
	Final Exam	30%
	<u>Homework</u>	<u>10%</u>
	TOTAL	100%

THE DROP POLICY for the COLLEGE OF ENGINEERING is at  
[www.csupomona.edu/~engineering/student/student\\_questions.html](http://www.csupomona.edu/~engineering/student/student_questions.html) .

