

Catalog Description: Introduction to heat conduction, convection, and radiation; steady state and transient solutions; introduction to boiling and condensation heat transfer.

Reference Textbooks:

1. “Heat Conduction” by Y. Yener and S. Kakaç, 4th edition, Taylor & Francis Group, LLC, 2008, ISBN 978-1-59169-046-7 (**required**)
2. “Heat Transfer” by A. F. Mills and V. Ganesan, 2nd edition, Pearson Education, Inc., 1999, ISBN 978-81-317-2713-3
3. “A Heat Transfer Textbook”, by John H. Lienhard IV and John H. Lienhard V. Open access link from MIT: <http://web.mit.edu/lienhard/www/ahtt.html>

Class Schedule: Lecture MW 03:00 – 04:20 P.M (Psychology Building 308)

Instructor: Md Mahamudur Rahman

Office: Engineering Building, Room# A118

Office Hours: Thursday 04:00 P.M – 05:00 P.M, Room#A118

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Grading:

Exams	25% Each	× 3	75%
Homework	10%		10%
Participation	5%	× 1	5%
Class Project	10%	× 1	10%

Approximate Timetable:

#	Date	Topics	Readings
1.	08/26 – 08/28	Introduction and The General Conservation Equations: Conservation of mass and momentum	Mills: 5.7
2.	09/02 – 09/04	SEPTEMBER 2 LABOR DAY Conservation of energy	Mills: 5.7
3.	09/09 – 09/11	1D Steady State Heat Conduction: Without Heat Sources	Kakaç: 3.1-3.2
4.	09/16 – 09/18	1D Steady State Heat Conduction: With Heat Sources	Kakaç: 3.3-3.5
5.	09/23 – 09/25	1D Steady State Heat Conduction: Extended Surfaces Exam-1 (in class)	Kakaç: 3.6
6.	09/30 – 10/02	2D heat steady state heat conduction	Kakaç: 5.1-5.3
7.	10/07 – 10/09	Steady-state 3D Heat Conduction	Kakaç: 5.5-5.6
8.	10/14 – 10/16	Unsteady-state Heat Conduction: Lumped heat capacity, 2D transient heat conduction	Kakaç: 6.1-6.2
9.	10/21 – 10/23	Semi-infinite body, Quasi-steady conduction	Kakaç: 6.4-6.5
10.	10/28 – 10/30	Semi-infinite body, Quasi-steady conduction	Kakaç: 6.4-6.5
11.	11/04 – 11/06	Conduction solutions with Fourier transforms Exam-2 (in class)	Kakaç: 7.1-7.3
12.	11/11 – 11/13	Conduction solutions with Fourier transforms	Kakaç: 7.1-7.3
13.	11/18 – 11/20	Conduction solutions with numerical methods	Kakaç: 12.1-12.8
14.	11/25 – 11/27	Convection Correlations	Mills: 4.1-4.2
15.	12/02 – 12/04	Radiation Heat Transfer	Mills: 6.4-6.6
	TBA	Exam-3	