

SME 4463 HEAT TRANSFER 01

Lecturer: Professor Amer N Darus,

Room: C24 -430Hp: 019 3239491

Main topics to be taught

- Introduction to Heat Transfer [1 week]
- 1. Conduction Heat transfer, [5 weeks]
- 2. Convection Heat Transfer, [4weeks]
- 3. Radiation Heat Transfer [4 weeks]

Main Textbook

Incropera, FP, DeWitt,DP, Berhmann, TL, and Lavine, AS., [2012], Foundations of Heat Transfer, Wiley, New York

Other Books Used:

1. Cengel, YA, and Ghajar, AI., [2011], Heat and Mass Transfer, Fundamentals and Applications, 4th SI ed., McGraw – Hill, New York
2. Bayazitolu, Y, and Ozisik, MN., [1988]., Elements of Heat Transfer, McGraw- Hill, New York
3. Holman, JP., [2012], Heat Transfer, 10th ed., McGraw-Hill, New York
4. Kreith,F, Manglik, RM, and Bohn, MS, [2011]., Principles of Heat Transfer, Cengege Learning, New York

Grading System:

1. Test 1	20%
2. Test 2	20%
3. Homework	10%
4. Final Examination	40%

Topic for Test 1

- Conduction Heat Transfer [Chapter 1, Chapter 2 and Chapter 3]

Topics For Test 2

- Conduction and Convection Heat Transfer [Chapter 5, Chapter 6 and Chapter 7]

Final Examination

- Covers all topics, emphasis is given on the topics not being asked in the two tests,
- Radiation Heat Transfer

Homework

- Tutorials questions are taken from the Main Textbook, 10 problems/2 weeks

Weekly Lectures Topics

Please Refer to: Main textbook, Incropera, FP, DeWitt, DP, Berhmann, TL, and Lavine, AS., [2012], **Foundations of Heat Transfer**, Wiley, New York

week	Dates	Topics to be Covered	Sections of the Book
1	18- 22/2	Conduction: Introduction to Heat Transfer	Chp 1: Sections 1.1 and 1.2
2	25/2 – 1/3	Conduction: Derivation of Conduction Eqn.	Chp 2: Section 2.1 upto Section 2.5
3	4/3 – 8/3	Conduction: Steady State one Dim. HT	Chp 3: Sections 3.1 to 3.3
4	11 - 15/5	Conduction: Steady State One Dim. HT	Chp 3: Sections 3.4 and 3.5
5	18 - 22/3	Conduction: Extended Surface Heat Transfer	Chp 3: Section 3.6
6	25 - 29/3	Conduction: Transient Heat Conduction	Chp 5: Sdsection 5.1 to 5.4 only
7	1 -- 5/4		
8	8 – 12/4	Convection: Introduction to Convection	Chp 6: sections 6.1 to 6.6
9	15– 19/4	Convection: External Forced Convec .HT	Chp 7: Sections 7.1 to 7.4 only
10	22– 26/4	Convection : Internal Forced Convec. HT	Chp 8: Sections 9.1 to 8.6 only
11	29/4 – 3/5	Convection : Natural Convection HT	Chp 9: Sections 9.1, 9.2, 9.6, 9.7, and 9.8
12	6 – 10/5	Radiation: Introduction to Radiation HT	Chp 12: Sections 12.1 to 12.5
13	13 – 17/5	Radiation: Surface properties, black and grey bodies.	Chp 12: Sections 12.6 to 12.8 Chp 13: Sections 13.1 to 13.2
14	20 -24/5	Radiation: Heat Exchange among black and grey bodies	Chp 13. Sections 13.3
15	27-31/5	Radiation: Heat Exchange in enclosure.	

