



**JORDAN UNIVERSITY OF SCIENCE & TECHNOLOGY**  
**MECHANICAL ENGINEERING DEPARTMENT**  
**ME 451 HEAT TRANSFER 1**

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<b>Catalog Data - 2013:</b>	3 Credit hour, Introduction. Concepts and definitions. Modes of heat transfer. Introduction to conduction. One dimensional, Steady-State Conduction, Transient Conduction, introduction to convection. External flow. Introduction to radiation.	
<b>Text Book(s):</b>	Principles of Heat and Mass Transfer, F. Incropera, D. DeWitt, T. L. Bergman and A. S. Lavine. John Wiley and Sons, New York. Seventh Edition.	
<b>References:</b>	<ol style="list-style-type: none"><li>1. Introduction to Heat Transfer, V. Arpaci, S. Kao and A. Selamet. Prentice Hall, NJ. First Edition 1999.</li><li>2. Heat Transfer, A. Bejan. John Wiley and Sons, New York. First Edition 1993.</li><li>3. Heat Transfer, Y. Cengel, McGraw-Hill, New York, First Edition 1998.</li></ol>	
<b>Instructor:</b>	_____	
<b>Class Schedule:</b>	_____	
<b>Office Hours:</b>	_____	
<b>Pre/Co-Requisites:</b>	ME 302, ME 341	
<b>Outcomes:</b>	<ul style="list-style-type: none"><li>• Students will be familiarized with the different modes of heat transfer and mathematical models, which describe these modes.</li><li>• Students will be familiarized with the way in which these modes of heat transfer interact with each other.</li></ul>	
<b>Topics Covered:</b>	<ul style="list-style-type: none"><li>• Introduction; concepts and definitions, modes of heat transfer</li><li>• Steady-state conduction (one dimensional)</li><li>• Transient conduction.</li><li>• Introduction to convection.</li><li>• External convection.</li><li>• Introduction to radiation.</li></ul>	
<b>Computer Usage:</b>	None	
<b>Design Activities/Project(s):</b>	None	
<b>Lab. Experiment(s):</b>	None	
<b>Scientific Visit(s):</b>	None	
<b>Evaluation:</b>	First Exam, ( 3/11/2015)	<b>30 %</b>
	Second Exam, (1/12/2015)	<b>30 %</b>
	Final Exam ,	<b>40 %</b>

**Relationship of the Course to  
ME Outcomes:**

ABET a – k	√	Level (L, M, H)	Mechanical Eng. Program Outcomes
a	√	M	a. Apply knowledge of mathematics, science, and engineering in practice.
b			b. Design and conduct experiments as well as analyze and interpret data.
c			c. Design a system, components, or process to meet desired needs.
d			d. Function on multidisciplinary teams.
e	√	H	e. Identify, formulate, and solve engineering problems.
f			f. Understanding of professional and ethical responsibility of an engineer.
g			g. Communicate effectively.
h			h. Broad education to understand the impact of engineering solutions in global and societal context.
i			i. Recognition of the need for, and possess the ability to engage in, lifelong learning.
j			j. Possess knowledge of contemporary issues.
k			k. Use the techniques, skills, and modern engineering tools necessary for engineering practice.
l			l. Adhere to safety rules and regulations.

**L: Low, M:Medium, H: High**

**ABET Category:**

Engineering Science                      3      Credits  
 Engineering Design                      0      Credits

**Prepared By:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Rules and notes:**

- 1) Never come late to the classroom, you will disturb your mates and your instructor if you do so.
- 2) Turn OFF your cell phones during the class.
- 3) DO Not TALK during the class please, unless you have a question for me.
- 4) Make up exams are not held without an official signed and approved excuse from the **Department Chairman**. Please understand that this is a university law and I have no control over it.
- 5) Office hours are the hours I dedicate for you to ask me. If you think they do not suit you, then we can still arrange for a time of our convenience by sending an e-mail to me (you should expect an approval from my side).
- 6) The exams specified on the course syllabus are not subject to negotiations or change once approved by you **TODAY**. It is your responsibility to inform the other instructors about your assigned exams.