



MUTAH UNIVERSITY
Faculty of Engineering
Department of Chemical Engineering



Heat Transfer
COURSE SYLLABUS

Course Code	Course Name	Credits	Contact Hours
0404430	Heat Transfer	3	To be determined later

INSTRUCTOR/COORDINATOR

Name	Dr. Salah Aljbour
Email	saljbour@mutah.edu.jo
Website	

TEXTBOOK

Incropera F., DeWitt D. , Bergman, Lavine, Fundamentals of Heat and Mass Transfer, 7th edition, John Wiley Son, New York, 2011

Other Supplemental Materials

- Çengel, Y.A. and Afshin J. Ghajar, Heat and Mass Transfer –Fundamentals and applications, 5th ed., McGraw – Hill, New York, 2014.
- Holman J P (2008), Heat Transfer, 9th edition, McGraw-Hill, 2008

SPECIFIC COURSE INFORMATION

A. Brief Description of the Content of the Course (Catalog Description)

This course aims to consolidate the concepts and applications of heat transfer in the student's mind. The course includes the principles of heat transfer and thermal properties of materials, mathematical models related to heat transfer by conduction, natural and forced convection, analogy between momentum and heat transfer, condensation and boiling, an introduction to heat transfer by radiation, heat exchangers.

B. Pre-requisites (P) or Co-requisites (C)

(P):0404244 (Fluid Mechanics)

C. Course Type (Required or Elective)

Required (Compulsory department course)

SPECIFIC GOALS

A. Specific Outcomes of Instruction

Upon successful completion of this course, a student should have:

1. An ability to understand mechanisms of heat transfer [1]
2. An ability to derive the heat balance equation in 3-dimensional systems [1]
3. An ability to understand the steady and un-steady state conduction heat transfer [1]
4. An ability to understand the external and internal heat convections over different geometries [1]
5. An ability to understand the principles of boiling and condensation processes [1]
6. An ability to understand the principles of heat exchange equipments [1]
7. An ability to design unit operations involving heat exchange processes [1,2]

B. Student Outcomes Addressed by the Course

1	2	3	4	5	6	7				
✓	✓									

BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
Introduction	1	3 hrs/week
Steady heat conduction	2	3 hrs/week
Un-steady heat conduction	1	3 hrs/week
Convective heat transfer (natural and Forced)	2	3 hrs/week
heat balance equations in rectangular, cylindrical, and spherical coordinates	2	3 hrs/week
Analogy between momentum and heat transfer	2	3 hrs/week
Condensation and Boiling	2	3 hrs/week
Radiation	2	3 hrs/week
Heat Exchangers	2	3 hrs/week
Total	16	48 hrs

METHODS OF ASSESSMENT

No.	Method of assessment	Week and Date	%
1	Midterm Exam	8 th week	30
3	HWs and Quizes	Homework/week	30
4	Final Exam	The 16 th week	50
Total			100