Jordan University of Science and Technology

Faculty of Engineering

Mechanical Engineering Department

ME741 Advanced Heat Transfer
Second Semester 2023-2024

Course Catalog
3 Credit Hours. Multidimensional steady and transient heat conduction; forced and natural convection; radiation exchange
Teaching Method: On Campus

Text Book	
Title	Heat and Mass Transfer
Author(s)	A.F. Mills
Edition	2nd Edition
Short Name	Text Book 1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Text Book 2	Heat Transfer	G. Nellis and S. Klein	1st Edition	
Text Book 3	Conduction Heat Transfer	V.S. Arpaci,	2nd Edition	

Instructor	
Name	**Dr. Khaleel Al-khasawneh**
Office Location	M5L2
Office Hours	
Email	krkhasawneh@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Thu : 14:30 - 17:30
Room: M5127

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2, 3, 4	1- Apply separation of variables to steady-state and transient heat conduction problems in Cartesian and cylindrical coordinate systems. 2. Apply separation of variables to steady-state conduction with heat generation	From **Text Book 3**
Weeks 5, 6, 7, 8	1- Solve internal and external flow, forced convection problems. 2- Solve external flow natural convection problems.	From **Text Book 2**
Weeks 9, 10, 11, 12	Identify different regimes of boiling and condensation.	From **Text Book 1**
Weeks 13, 14, 15, 16	Recognize, model, and solve radiation heat transfer problems	From **Text Book 2**

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
First Exam	25%	
Project	25%	
Final Exam	50%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7

Date Printed: 2024-05-13