



Jordan University of Science and Technology
Faculty of Engineering
Chemical Engineering Department

CHE242 Engineering Thermodynamics - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

3 Credit Hours. Forms of energy and their conversion, open and closed systems, work and heat, PVT properties of pure fluids, steam tables, first law of thermodynamics, second law of thermodynamics, entropy concept and zeroth law of thermodynamics, third law of thermodynamics (open and closed systems), analysis of power cycles (steam power plants and refrigeration).

Teaching Method: On Campus

Text Book

Title	Thermodynamics an Engineering Approach
Author(s)	Gengel, A.Y., and Boles, A.M
Edition	7th Edition
Short Name	Text book
Other Information	

Instructor

Name	Prof. Munther Kandah
Office Location	CH2 L2
Office Hours	Sun : 08:30 - 09:30 Sun : 10:30 - 11:30 Mon : 10:00 - 11:00 Tue : 08:30 - 09:30 Tue : 10:30 - 11:30 Wed : 10:00 - 11:00
Email	mkandah@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue, Thu : 09:30 - 10:30

Room: CH2106

Section 2:

Lecture Time: Sun, Tue, Thu : 11:30 - 12:30

Room: CH2106

Prerequisites

Line Number	Course Name	Prerequisite Type
222030	CHE203 Fundamentals Of Chemical Engineering	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Introduction and basic concepts	From Text book
Weeks 3, 4	Energy, energy transfer and general energy analysis	From Text book
Weeks 5, 6, 7	Properties of pure substance	From Text book
Weeks 8, 9, 10	Energy analysis of closed systems	From Text book
Weeks 11, 12	Mass and energy analysis of control volumes	From Text book
Weeks 13, 14	The second law of thermodynamics	From Text book
Weeks 15, 16	Entropy Concept for closed and open system	From Text book

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe the thermodynamics concepts and definitions. [2SO1] [1L7K1]	30%	
Apply the 1st and 2nd law of thermodynamics on a close and open engineering systems. [1SO2] [1L7S2]	30%	
Use the PVT relationship and thermodynamics properties in thermodynamic applications. [2SO1] [1L7S1]	10%	
Calculate the work, heat, and changes in the energy of the system for a given process. [2SO2] [1L7S2]	20%	
Employ the basic ideas of heat engines and refrigerators in thermodynamic applications. [1SO2] [1L7S2]	10%	

Relationship to Program Student Outcomes (Out of 100%)

SO1	SO2	SO3	SO4	SO5	SO6	SO7
40	60					

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S2
30	10	60

Evaluation	
Assessment Tool	Weight
first	30%
Second	30%
final	40%

Policy	
Course policy	Assessment Tool Expected Due Date Weight Homework & Quizzes One week after homework problems First Exam According to the department schedule 30 % Second Exam According to the department schedule 30 % Final Exam According to the University final examination schedule 40 %

Date Printed: 2024-02-27