



**Jordan University of Science and Technology**  
**Faculty of Science & Arts**  
**Physics Department**

PHY261 Thermodynamics - JNQF Level: 7

Second Semester 2024-2025

**Course Catalog**

3 Credit Hours. This course deals with experimental laws that govern the behavior of thermal systems and the derivation of physical properties related to them

**Teaching Method:** On Campus

**Text Book**

<b>Title</b>	Thermodynamics, Kinetic Theory, and Statistical Thermodynamics
<b>Author(s)</b>	F. W. Sears & G. H. Salinger,
<b>Edition</b>	3rd Edition
<b>Short Name</b>	1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
2	Classical and Statistical Thermodynamics	Carter, A. H	1st Edition	
3	Introduction to Thermophysics	Espinola, T. P	1st Edition	

**Instructor**

Name	<b>Dr. EMAD ALMAHMOUD</b>
Office Location	-
Office Hours	
Email	eaalmahmoud@just.edu.jo

**Class Schedule & Room**

Section 1:

Lecture Time: Sun, Tue, Thu : 14:00 - 15:00

Room: PH2102

**Prerequisites**

Line Number	Course Name	Prerequisite Type
922110	PHY211 Properties Of Matter And Heat	Prerequisite / Pass

**Tentative List of Topics Covered**

Weeks	Topic	References
Weeks 1, 2, 3	Fundamental concepts	From 1
Weeks 4, 5	Equations of state	From 1
Weeks 6, 7, 8	First law of Thermodynamics	From 1
Weeks 8, 9, 10	Some consequences of the first law	From 1
Weeks 11, 12	Entropy and the second law of Thermodynamics	From 1
Weeks 13, 14	Combined first and second laws	From 1
Weeks 14, 15	Thermodynamic potentials	From 1
Week 16	Applications of thermodynamics to simple systems	From 1

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
explain the basics of thermodynamics and derive the equation of the state of an ideal and real gas. [3SLO1(K1S1)] [1L7K1, 1L7S1]	33%	
Understand and apply the first and second laws of thermodynamics to understand and explain systems in physics problems. [3SLO1(K1S1)] [1L7K1, 1L7S1]	34%	
Apply thermodynamics potential and solve simple system [3SLO1(K1S1)] [1L7K1, 1L7S1]	33%	

**Relationship to Program Student Outcomes (Out of 100%)**

SLO1(K1S1)	SLO2(S23C1)	SLO3(C24)	SLO4(C3)	SLO5(C4)	SLO6(S2C3)
100					

**Relationship to NQF Outcomes (Out of 100%)**

L7K1	L7S1
50	50

<b>Evaluation</b>	
<b>Assessment Tool</b>	<b>Weight</b>
First exam	25%
Second exam	25%
Assignments	10%
Final exam	40%

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