Jordan University of Science and Technology

Faculty of Science & Arts

Physics Department

PHY282 Optics - JNQF Level: 7
Second Semester 2023-2024

Course Catalog
3 Credit Hours. Reflection and refraction. Mirrors and lenses. image formation, aberrations, and wave optics. nature of light, wave equation, interference. Interferometers, diffraction, and polarisation.
Teaching Method: Blended

Text Book	
Title	Introduction to Optics
Author(s)	F. L. Pedrotti, L. M. Pedrotti, L. S. Pedrotti
Edition	3rd Edition
Short Name	Introduction to Optics
Other Information	

Instructor	
Name	**Dr. Adnan Shariah**
Office Location	PH3 L1
Office Hours	
Email	shariah@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun, Tue : 11:30 - 12:30 Room: M3306

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
922810	PHY281 Vibrations And Waves	Pre./Con.

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
	Properties of light	**Ch 1** From **Introduction to Optics**
	Plane surfaces and prisms	**Ch 2** From **Introduction to Optics**
	Spherical Surfaces	**Ch 3** From **Introduction to Optics**
	Thin Lenses	**Ch 4** From **Introduction to Optics**
	Spherical Mirrors	**Ch 6** From **Introduction to Optics**
	The Effects of Stops	**Ch 7** From **Introduction to Optics**
	Lens Aberrations	**Ch 9** From **Introduction to Optics**
	Optical Instruments	**Ch 10** From **Introduction to Optics**
	Vibration and Waves	**Ch 11** From **Introduction to Optics**
	Interference of Two Beams of Light	**Ch 13** From **Introduction to Optics**
	Interference Involving Multiple Reflections	**Ch 14** From **Introduction to Optics**
	Fraunhofer Diffraction by a Single Opening	**Ch 15** From **Introduction to Optics**
	The Double Slit	**Ch 16** From **Introduction to Optics**
	The Diffraction Grating	**Ch 17** From **Introduction to Optics**
	The Polarization of Light	**Ch 24** From **Introduction to Optics**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Ability to understand the nature of light and principles of geometrical optics [3SLO1(K1S1)] [1L7K1, 1L7S1]	33%	
Introducing to scientific and industrial application of optics [3SLO1(K1S1)] [1L7K1, 1L7S1]	34%	
Ability to understand the light properties such as interference. Interferometers, Inter ferometry, Diffraction, polarization [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

Evaluation	
Assessment Tool	**Weight**
First Exam	30%
Second Exam	30%
Final Exam	40%

Policy	
Prerequisites	Calculus 2, Physics 2, vibration and waves, PHY 281

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