



Course Specifications

Program(s) on which this course is given:	B. Sc. In Aerospace
Department offering the program:	Aerospace
Department offering the course:	Engineering Mathematics and Physics
Academic Level:	1st Year Aerospace (2nd Year in a five-year program)
Date	November, 2007
Semester (based on final exam timing)	<input type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring

A- Basic Information

1. Title:	Physics (2)		Code:	PHY116				
2. Units/Credit hours per week:	Lectures	3	Tutorial	1	Practical	1	Total	5

B- Professional Information

1. Course description:	
2. Intended Learning Outcomes of Course (ILOs):	a) Knowledge and Understanding
	At the end of this course, the student should be able to:
	A1 define wave intensity and Poynting vector
	A2 discuss the Doppler effect in sound and in light
	A3 state Maxwell's Equations
	A4 state Fresnel equations
	b) Intellectual Skills
	B1 apply principle of superposition for multiple SHM, algebraically and graphically.
	B2 measure the curvature of the convex lens using Newton's Rings
	B3 measure the width of narrow slit using single and double slit diffraction.
	c) Professional and Practical Skills
	C 1 calculate speed, acceleration and energy of simple harmonic motion.
	C 2 calculate wave intensity, absorption of wave an wave function equation.
d) General and Transferable Skills	
D1 Participate in team work.	
D2 Present and defend his point in oral exam	

3. Contents

Topic	Total hours	Lectures hours	Tutorial/ Practical hours
Waves and Nature of Light	8	6	2
Electromagnetic waves, Reflection and Refraction	4	3	1
Interference	4	3	1
Diffraction	4	3	1

Particle properties of Electromagnetic radiation	6	4	2
Introduction to Relativity	4	3	1
Wave properties of particles	6	4	2
4. Teaching and Learning Methods	Lectures (√)	Practical Training/ Laboratory (√)	Seminar/Workshop ()
	Class Activity (√)	Case Study ()	Projects ()
	E-learning ()	Assignments /Homework ()	Other:
5. Student Assessment Methods			
• .Assessment Schedule		Week	
-Assessment 1; Regular Experimental Assignments		each week	
-Assessment 2; Midterm Exam		10	
-Assessment 3; Oral and experimental Exam		13	
-Assessment 3; Final Exam		End of Term	
• Weighting of Assessments			
-Mid-Term Examination		30	
-Final-term Examination		80	
- Experimental Labs & Oral Examination.		15	
-Total		125	
6. List of References			
Course Notes: Notes by lecturers			
"Physical Optics," Engineering Physics Dept., Cairo University, Egypt, 2007.			
"Experimental Physics Lab for First Year," Engineering Physics Dept., Cairo University, Egypt, 2007.			
"Solved Problems on Physical Optics for Engineering Students", Engineering Physics Dept., Cairo University, Egypt, 2007.			
http://www.physicsdaily.com/physics/			
7. Facilities Required for Teaching and Learning			
1. . Data Show and white board			
2. Traditional methods			
3. Well equipped labs with sufficient number of calibrated experiments with respect to number of students			
Course Coordinator:	Dr. Fayza Gamal and Dr. Girguis Adeeb		
Head of Department:	Prof. Dr. Ayman Hamdy		