

جامعة : المنصورة

كلية : العلوم

قسم / الفيزياء

توصيف مقرر دراسي

١- بيانات المقرر		
الرمز الكود: ف٢٢١	اسم المقرر: Physical Optics	المستوى : الثاني
البرنامج : الكيمياء	عدد الوحدات الدراسية: ٢ نظري : ٢ تمارين: ١ عملي: -	

٢- هدف المقرر: For students undertaking this course, the aims are to: 1 - Introduce the student to the concept of the wave nature of light. 2 - Acquaint the student with the fact that the superposition of light waves leads to a wide variety of effects called interference. 3 - Study the two beams and multiple beam interference and application 4 - develop a clear understanding of basic concept of change of phase at reflection 5 - Acquire the student's skills to drive mathematical formula of the diffraction of light. 6 - Enable the students to use the diffraction grating as a powerful device for dispersing light into its component wavelength. 7 - Study the polarization is firm evidence of the transverse nature of light wave.	
٣- المستهدف من التدريس المقرر:	
a- Knowledge and Understanding : On completing this course, students will be able to:	أ-المعلومات والمفاهيم:

<p>a - 1 - understand the relation between the amplitude of wave and its intensity</p> <p>a - 2 - Explain the principle of superposition of two or more light waves.</p> <p>a - 3 - Explain the principle of change of phase at reflection</p> <p>a - 4 - Explain the principle of superposition of two or more light waves.</p> <p>a - 5 - understand the resolving power of an optical system</p> <p>a - 6 - Understand the Polarization of light.</p>	
<p>b- Intellectual Skills: On completing this course, students will</p> <p>b - 1 - Analyze the single slit diffraction by using mathematical tools like phase or physical formulas</p> <p>b - 2 - Sketch graphically how different optical instruments can work.</p> <p>b - 3 - Test how light waves can interfere constructively or destructively</p> <p>be able to:</p>	<p>ب-المهارات الذهنية</p>
<p>c-Professional and Practical Skills: On completing this course,</p> <p>c - 1 - design some optical devices to measure some physical parameters</p> <p>c - 2 - Compare between the intensity distribution pattern of two beam and multiple beam interference.</p> <p>students will be able to:</p>	<p>ج- المهارات المهنية</p> <p>الخاصة بالمقرر:</p>
<p>d-General and Transferable Skills: On completing this course,</p> <p>d - 1 - Collect information's about subject.</p> <p>d - 2 - Collect and analyze the database of information related to different subjects.</p> <p>d - 3 - Solve problems.</p> <p>students will be able to:</p>	<p>د- المهارات العامة :</p>

1- wave motion: Path difference, energy of vibrating particle, superposition of two wave	٤- محتوى المقرر:		
2- Interference of two beam of light: 1- division of wave front & 2-division of amplitude.			
3- Interference of multiple beam			
4- Diffraction of light			
5- Polarization of light			
5.1 - Lectures using overhead projector and board.	٥- اساليب التعليم والتعلم:		
5.2 - Discussion sessions			
5.3 - Problem classes and group tutorial.			
5.4 - Class activity.			
The same as normal students, only skeletal disabilities are allowed in the Faculty of Science.	٦- أساليب التعليم والتعلم للطلاب ذوي القدرات المحدودة:		
٧- تقويم الطلاب :			
7- Student Assessment Methods			
Final exam	to assess	a2,a6,b1,b2,c1,d3,a4	أ- الأساليب المستخدمة :
Oral exam	to assess	a1,a3,b3,c2	
Mid-term exam	To assess		
Report	to assess	d1,d2,d3,a5	
Assessment Schedule			ب- التوقيت :
Assessment 1	Week #final exam	Week 14	
Assessment 2	Week #oral exam	Week 14	

Assessment 3	Week #mid-term exam	Week	
Assessment 4	Week #report	Week 3,4,5,6,7,8,9,10	
Weighting of Assessments			ج- توزيع الدرجات :
Final-Term Examination	80%		
Oral Examination	10%		
Practical Examination	0%		
Semester work	0%		
Mid-term examination	10%		
Other types of assessment	0%		
Total	100%		
٨- قائمة الكتب الدراسية والمراجع :			
1 - Notes offered by the physics department			أ- مذكرات:
			ب- كتب ملزمة
1 - Raymond A. Serway ,Physics for Scientists and Engineers ,John W. Jewett			ج- كتب مقترحة :
1 - http://en.wikipedia.org			د- دوريات علمية أو نشرات..

مصفوفة المعارف والمهارات المستهدفة من المقرر الدراسي

	المحتويات للمقرر	أسبوع الدراسة	المعارف الرئيسية	مهارات ذهنية	مهارات مهنية	مهارات عامة
1	wave motion: Path difference, energy of vibrating particle, superposition of two wave	1-2	a1,a2			d1,d3

2	Interference of two beam of light: 1- division of wave front & 2-division of amplitude.	3-6	a2,a3	b2,b3		
3	Interference of multiple beam	7-8			c2	d1,d3
4	Diffraction of light	9-10	a4,a5	b1		
5	Polarization of light	11-12	a6		c1	d2

أستاذ المادة : د./محمد عنتر عبد المجيد قابيل

رئيس مجلس القسم العلمي : أ.د./المتولى محمود عبد الرازق