

ATTACHMENT 2 (e)

Course Specifications

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation &
Assessment**

**optics
Course Specifications
(CS)
Course
Specifications**

Institution University of Dammam

Date 2014

College/Department science college – physics department

A. Course Identification and General Information

1. Course title and code: Optics -Phys203 N
2. Credit hours 2 hours/week
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Bachelor of Physics from Physics department/ College of Science
4. Name of faculty member responsible for the course A specific team from the physics Department
5. Level/year at which this course is offered level 3/ 2 year

6. Pre-requisites for this course (if any) General physics 2		
7. Co-requisites for this course (if any) No found		
8. Location if not on main campus Location is on the main campus/ Faculty of Sciences		
9. Mode of Instruction (mark all that apply)		
a. traditional classroom 80%	yes	What percentage?
b. blended (traditional and online) percentage?		What
c. e-learning 10%	yes	What percentage?
d. correspondence 0%	No	What percentage?
f. other 5%	yes	What percentage?
Comments:		

B Objectives

1. What is the main purpose for this course?
 - Students learn the characteristics of light engineering.
 - Students learn the concept of the optical fiber.
 - Recognize the student and laser types and uses.
 - Recognize some of the practical applications of the properties of light engineering.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)
 1. Lecture notes were posted for the student via black board before lectures time so as to achieve the benefits of inverted lectures.
 2. The course material is written as a Power Point text that could be accessed by the students enrolled in the course.
 3. The text is provided with huge number of detailed windows images corresponds to the text, and some videos and animations for helping the student to self-learning.
 4. Simplifying the analysis of some physics experiments and phenomena, to be easy for understanding using videos and animations.

C. Course Description (Note: General description in the form used in Bulletin or handbook)

Course Description:

Students learn :The Nature of Light- Reflection and Refraction- The Law of Refraction-

Dispersion and Prisms- The Rainbow- Huygens' Principle- Total Internal Reflection- Flat Mirrors- Images Formed by Concave Mirrors- Convex Mirrors and Sign Conventions- Images Formed by Refraction- Atmospheric Refraction- Thin Lenses- Lens and Mirror Aberrations

1. Topics to be Covered			
List of Topics	No. of Weeks	Contact hours	
The Nature of Light , The speed of light through matters, luminous Measurement and Photometer joly	2	2	
Reflection and images formed by flat mirror	3	2	
Refraction and The Law of Refraction	4	2	
Huygens' Principle - Dispersion and Prisms- The Rainbow and Total Internal Reflection	5	2	
Images Formed by Concave Mirrors- Convex Mirrors and Sign Conventions	6	2	
Example for Images Formed by Concave Mirrors- Convex Mirrors and Sign Conventions	7	2	
The maid term test	8	2	
Images Formed by Refraction-	9	2	
Thin Lenses	10	2	
Atmospheric Refraction Lens and Mirror Aberrations	11	2	
Laser	12	2	
Nature and its applications and uses.			
Showing the student for project	13	2	

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	26	NA	NA	NA	NA	26
Credit	2					

3. Additional private study/learning hours expected for students per week./

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and

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On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	<ul style="list-style-type: none"> to know the student and the intensity of light Luminosity. 		Demonstrating the basic information and principles through lectures and the achieved applications <ul style="list-style-type: none"> Discussing phenomena with illustrating pictures and diagrams Solve some example
			<ul style="list-style-type: none"> Quizzes Assignments Homework

		<i>during the lecture.</i>	
1.2	<ul style="list-style-type: none"> • The student knows the phenomenon of refraction and reflection 	<ul style="list-style-type: none"> • <i>Discussing phenomena with illustrating pictures and diagrams</i> • <i>Solve some example during the lecture.</i> 	<ul style="list-style-type: none"> • In class a large number of multiple choice questions and short MCQs quizzes. • Major and final examinations. • Evaluation of the written reports. •
1.3	<ul style="list-style-type: none"> • to know the student mirrors and lenses. 	<ul style="list-style-type: none"> • <i>Discussing phenomena with illustrating pictures and diagrams</i> • <i>Solve some example during the lecture.</i> 	<ul style="list-style-type: none"> • <i>Quizzes</i> • <i>Assignments</i> • <i>Homework</i>
1.4	<ul style="list-style-type: none"> • The student distinguish the difference between ordinary light and laser light - nearsightedness and farsightedness - astronomical telescope and ground telescope. 	<ul style="list-style-type: none"> • Demonstrating the basic information and principles through lectures and the achieved applications. • <i>Solve some example during the lecture.</i> 	<ul style="list-style-type: none"> • Quizzes • Assignments • Homework
1.5	<ul style="list-style-type: none"> • remember that the student use triangular prism to disperse the light rays. 	<ul style="list-style-type: none"> • <i>Discussing phenomena with illustrating pictures and diagrams</i> • <i>Solve some example during the lecture.</i> 	<ul style="list-style-type: none"> • In class a large number of multiple choice questions and short MCQs quizzes. • Assignments • Homework

1.6	<ul style="list-style-type: none"> to know the student usages scientific and practical applications of light 	<ul style="list-style-type: none"> Demonstrating the basic information and principles through lectures and the achieved applications. <i>Discussing phenomena with illustrating pictures and diagrams</i> <i>Solve some example during the lecture.</i> 	<ul style="list-style-type: none"> In class a large number of multiple choice questions and short MCQs quizzes. Assignments Homework.
2.0	Cognitive Skills		
2.1	<ul style="list-style-type: none"> The student comparing the phenomena of reflection and refraction. that the special light laws apply student. The student draws light rays that fall on 	<ul style="list-style-type: none"> Discussions in the class during lectures Homework 	<ul style="list-style-type: none"> In class multiple choice questions and short MCQs quizzes.
	<ul style="list-style-type: none"> different surfaces to create the image path. The student formulates the differences between the lenses and mirrors the positive power and negative power and images formed. To distinguish the between difference the wave length refraction. Requesting that comparing the human eye and the camera. 	<ul style="list-style-type: none"> assignments as well as experiments and phenomena analysis 	<ul style="list-style-type: none"> Major and final examinations. Checking and monitoring the solution of problems. Checking the homework reports about analysing experiments and physics phenomena. Monitoring student during using key board and solution the example in class.
3.0	Interpersonal Skills & Responsibility		
3.1	<ul style="list-style-type: none"> <i>The students learn independently and take up responsibility</i> 	<ul style="list-style-type: none"> <i>Learn how to search the internet and use the library.</i> 	<ul style="list-style-type: none"> <i>Quizzes on the previous lecture.</i> <i>Checking report on internet use and trips.</i>
3.2	<ul style="list-style-type: none"> <i>The student fluent in dealing with others and collaborative work.</i> 	<ul style="list-style-type: none"> <i>Teamwork</i> 	<ul style="list-style-type: none"> <i>Mini project</i>

3.3	• The student respects the opinions of others . The student accepts criticism.	• Interactive learning	• Assignments • Teamwork
4.0	Communication, Information Technology, Numerical		
4.1	Feeling mathematical reality of solving problems	• Know the basic physical principles. • Discuss with the student	Their interaction with the lectures and discussions
5.0	Psychomotor		
5.1	Writing by keyboard	Training	Monitoring during operation

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)											
	1.1	1.2	1.3	1.4	1.5	1.6	2.1	3.1	3.2	3.3	4.1	5.1
1	#	#	#	#	#	#						
2							#					
3								#	#	#		
4											#	
5												#

6. Schedule of Assessment Tasks for Students During the Semester

	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Major examination I	7	15%
2	Major examination II	10	15%
3	Examination I at the black board	11	5%
4	Examination II at the black board	12	5%
5	Class activates (class quizzes, homework, problem analysis discussion.	Among Semester	5%
6	Write a report on the phenomenon of light or machine and displayed in front of students	14	5%
7	Final exam	15	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

- Office hours 4

hour / week.
Help through office phone and by email (open time)

E Learning Resources

1. List Required Textbooks

1. College physics by serway vuille ninth edition

2. List Essential References Materials (Journals, Reports, etc.)

College physics by serway vuille ninth edition Physiscs for scientist and engineers with modern physics by serway vuille tenth edition
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc) Introduction to physics ,John D.Cutnell , 9 th ediation
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. <i>www. Science direct .com</i> <i>www. Google.com .</i>
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. <i>No found</i>

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) <ul style="list-style-type: none"> • <i>Lecture room with an enough number of seats.</i> • <i>Lecture room must be furnished with data-show.</i>
2. Computing resources (AV, data show, Smart Board, software, etc.) <i>Computer, data show, Smart Board ,and black board</i>
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list) <i>No Apply</i>

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • <i>Via questionnaires</i> • <i>Meeting with students</i> • <i>e-suggestions</i> • <i>Open door policy</i>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p> <ul style="list-style-type: none"> • <i>Via questionnaires</i>
<p>3 Processes for Improvement of Teaching</p> <ul style="list-style-type: none"> • <i>Report writing of the course and determine goals.</i> • <i>Fortification of the student learning.</i> • <i>Handling the weakness point.</i>
<p>4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) <i>Auditing a corrected sample of exams by specialized professors in the department.</i></p>

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

- *the course material and learning outcomes are periodically reviewed and the changes to be taken are approved in the departmental .*
- *The head of department and faculty take the responsibility of implementing the proposed changes.*
- *Collecting all reports and evaluations at the end of the year for a reviewing purpose.*
- *Conducting a workshop to presents finding of reports and evaluation to share knowledge.*