

المركز الوطني للتقويم والاعتماد الاكاديمي National Center for Academic Accreditation and Evaluation

## ATTACHMENT 5.

# T6. COURSE SPECIFICATIONS (CS)



### **Course Specifications**

Institution: Faculty of Science	Date: 21/4/2019			
College/Department : Physics				
A. Course Identification and General Information				
1. Course title and code: Optics , PHYS311				
2. Credit hours: <b>3</b>				
3. Program(s) in which the course is of	fered. Physics			
(If general elective available in many pr	rograms indicate this rather than list programs)			
4. Name of faculty member responsible	e for the course: Dr. M. Almatari			
5. Level/year at which this course is of	fered:5			
6. Pre-requisites for this course (if any)	:			
7. Co-requisites for this course (if any)	:			
8. Location if not on main campus:Main campus and women campus				
9. Mode of Instruction (mark all that ap	oply):			
a. traditional classroom	What percentage? 100%			
b. blended (traditional and online)	What percentage?			
c. e-learning	What percentage?			
d. correspondence	What percentage?			
f. other	What percentage?			
Comments:				



#### **B** Objectives

1. What is the main purpose for this course? Introduce the students to the fundamental laws of optics with simple applications.

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)

Work on lectures notes and handouts to help the students work standalone.

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

Course Description: Geometrical Optics, Wave motion, electromagnetic theory, the superposition of waves, polarization, diffraction, interference and basics of coherence theory.

No. of Weeks	Contact hours
2	6
2	6
2	6
2	6
2	6
2	6
2	6
	No. of         Weeks         2 <th2< td=""></th2<>



2. Course components (total contact hours and credits per semester):							
		T (		Laboratory/		0.1	<b>m</b> (1
		Lecture	Tutorial	Studio	Practical	Other:	Total
	r			Studio			
Contact	Planed	45					45
Hours	Actual	45					45
Credit	Planed	3					3
	1 101100	5					5
	Actual	3					3
-	•	•	-			•	

3. Additional private study/learning hours expected for students per week. 6h

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

#### 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	Course Teaching	Course Assessment	
#	And Course Learning Outcomes	Strategies	Methods	
1.0	Knowledge			
1.1	Define the physical quantities, physical phenomena, and basic principles of optics	<ul><li>Lectures</li><li>In-class discussions</li><li>Exercises</li></ul>	Exams.     Homework.	
1.2	- Develop a conceptual understanding of the principles of optics.	• Home works	• Quizzes.	
2.0	Cognitive Skills			
2.1	Apply the laws of physics to calculate some physical quantities.	<ul><li> Lectures.</li><li> Problem solving</li></ul>	<ul><li> Presentations</li><li> Homework.</li></ul>	
2.2	Solve problems in physics by using suitable mathematics.	<ul> <li>Small group work</li> <li>Presentations</li> </ul>	• Classwork.	
2.3	Analyse and interpret quantitative results.			
2.4	Derive the physical laws and formulas.			
3.0	Interpersonal Skills & Responsibility			
3.1	Work effectively in groups and exercise leadership when appropriate	• Awareness of time	• Respecting	



	Education Evaluation Commission					
3.2	Show responsibility for self-learning to be aware	management in	deadlines.			
0.2	with recent developments in physics	completing their	<ul> <li>Giving clear and</li> </ul>			
	-Encourage students to think critically and	reports.	logical arguments			
	involve in discussions with the instructor in	• Encourage students	• Oral exams			
	classroom.	to help each other	<ul> <li>Logical</li> </ul>			
		<ul> <li>Group assignments</li> </ul>	reasoning			
3.3		• Lectures				
		• Case study				
		<ul> <li>Small group work</li> </ul>				
		• Whole group				
		discussion.				
4.0	Communication, Information Technology, Numerica	al	·			
4.1	Develop the scientific language skills	Whole group	E-mail			
	- Develop communication skills with others	discussion	correspondences.			
12	via websites or e-mail	L ecture	Exams.			
4.2		Presentations	Homework.			
		1 resentations				
5.0	Psychomotor		Γ			

5. Schedule of Assessment Tasks for Students During the Semester				
	Assessment task (i.e., essay, test, quizzes, group project, Week Due		Proportion of Total	
	examination, speech, oral presentation, etc.)		Assessment	
1	HM & Quizzes	1-12	10%	
2	First Exam	7	25%	
3	Second Exam	12	25%	
4	Final Exam	15	40%	



#### **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)

For every lecture hour there should be an office hour. Also the instructor should be easily reachable at any time.

#### **E Learning Resources**

1. List Required Textbooks

Halliday, David, Robert Resnick, Jearl Walker. Fundamentals of Physics, 7th ed. Hoboken, N.J.: John Wiley and Sons. 2005.

Jurgen R, . Meyer-Arendt, Introduction to Classical and Modern Optics, Prentic – Hall international , (1995).

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

Allen Nussbaum and Richard A. Phillips, Contemporary Optics for Scientists and Engineers, Prentice –Hall.

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

Online resources

4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.



#### **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.)

Classrooms

2. Technology resources (AV, data show, Smart Board, software, etc.)

Datashow

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

#### **G** Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

Office hours are available to students for open discussions.

Students fill a blind online course evaluation form each semester.

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department **Evaluators: Academic Affairs Staff** 

#### **Evaluation Method: Faculty Peer Assessment**

3. Processes for Improvement of Teaching

- Provide training and workshop opportunities for the teaching staff to improve their teaching strategies.

- Form committees to follow up progress and work on improvement.

- Provide opportunities to improve academic courses and research through conferences.

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)

#### **Evaluators: Instructor**

Evaluation Method: Check marking of a sample of examination papers.

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

#### **Evaluators: Instructor**

**Evaluation Method:** 1) Continuous improvement is a circular process, encompassing student assessment, course planning and design, implementation, evaluation, and revision, 2) A feedback from all relevant assessment tools



Name of Course Instructor: \_\_\_\_ Dr Mohammad Almatari \_\_\_\_\_

Signature: \_\_\_\_\_ Mohammad Almatari \_\_\_\_ Date Specification Completed: \_\_22/04/2019\_\_\_\_\_\_

Program Coordinator: Dr. Fahad Alharbi Signature: **Dr. Fahad Alharbi** Date Received: 7/7/2019