هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title: General Physics (2) (فيزياء عامة)	
Course Code: PHYS 115	
Program: (Cross-Listed Course)	
- Civil Engineering Program - Electrical Engineering Program - Renewable Energy Program	- Architecture Program - Interior Design Program - Cybersecurity Program
Department: (Cross-Listed Course)	
- Civil Engineering Department - Electrical Engineering Department	- Architecture Department - Cybersecurity Department
College: College of Engineering and Information Technology	
Institution: Onaizah Private Colleges	
Version: Second Version	
Last Revision Date: 2023-04-07	

Table of Contents:

A. General information about the course:

Course Identification	
1. Credit hours:	3 Credit Hours
2. Course type a. University ☐ College ☐ Department ☒ Track ☐ Others ☐ b. Required ☒ Elective ☐	
3. Level/year at which this course is offered:	Second Level / First Year
4. Course general Description This course helps pre-engineering students to understand the basic facts, principles, theories and methods of general physics.	
5. Pre-requirements for this course (if any): PHYS 110	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s) The main objectives of this course are to Identify principles of classical Physics of level two. (Identify physics concepts in terms of vectors, uniform circular motion problems, solve linear momentum problems using momentum formulas and solve projectile motion problems using law of projectiles).	

1. Teaching mode

No.	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

2. Contact Hours (based on the academic semester)

No.	Activity	Contact Hours
1	Lectures	30
2	Laboratory/Studio	
3	Field	
4	Tutorial	30
5	Others (specify)	
Total		**60**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
PHYS 115.CLO.K.1	Identify physics concepts in terms of vectors for use in various applications	K.1(الأمن برنامج السيبرانى Cybersecurity)	Primary: Lecture Additional: Tutorial	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.CLO.K.2	Discuss uniform circular motion problems using circular motion laws	K.2(التصميم برنامج الداخلى Interior Design)	Primary: Group Work (competitive or cooperative / Online or F2F) Additional: Video	Formative: Essay (Individual or Group) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.CLO.K.3	Discuss uniform circular motion problems using circular motion law	K.2(العمارة برنامج Architecture)	Primary: Group Work (competitive or cooperative / Online or F2F) Additional: Video	Formative: Essay (Individual or Group) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.CLO.K.4	Identify physics concepts in terms of vectors for use in various applications	K.1(الهندسة برنامج الكهربائية Electrical Engineering)	Primary: Lecture Additional: Tutorial	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
PHYS 115.C LO. K.5	Explain ethical values, safety standards, and precautions related to physics to practice them properly in various applications	K.5(هندسة برنامج المتجددة الطاقة Renewable Energy)	Primary: Discussion (or similar active learning strategies \ F2F or Online) Additional: Group Work (competitive or cooperative / Online or F2F)	Formative: Essay (Individual or Group) Summative: Student Portfolio
PHYS 115.C LO. K.6	Identify physics concepts in terms of vectors for use in various applications	K.1(هندسة برنامج المتجددة الطاقة Renewable Energy)	Primary: Lecture Additional: Tutorial	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.C LO. K.7	Identify physics concepts in terms of vectors for use in various applications	K.1(الهندسة برنامج المدنية Civil Engineering)	Primary: Lecture Additional: Tutorial	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.C LO. K.8	Explain ethical values, safety standards, and precautions related to physics to practice them properly in various applications	K.5(الهندسة برنامج الكهربائية Electrical Engineering)	Primary: Video Additional: Discussion (or similar active learning strategies \ F2F or Online)	Formative: Essay (Individual or Group) Summative: Student Portfolio
2.0	**Skills**			

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
PHYS 115.C LO. S.1	Solve uniform circular motion problems using uniform circular laws	S.1(التصميم برنامج الداخلى Interior Design)	Primary: Interactive Lecture \ Demonstration Additional: Video	Formative: Oral Exam or Interview (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.C LO. S.2	Solve linear momentum problems using momentum formulas	S.3(الهندسة برنامج المدنية Civil Engineering)	Primary: Interactive Lecture \ Demonstration Additional: Video	Formative: Oral Exam or Interview (Rubric) Summative: Written Exam (MCQ or Essay / F2F or Online)
PHYS 115.C LO. S.3	Solve projectile motion problems using law of projectiles	S.2(العمارة برنامج Architecture)	Primary: Interactive Lecture \ Demonstration Additional: Tutorial	Formative: Quiz (Online or F2F) Summative: Written Exam (MCQ or Essay / F2F or Online)
3.0	**Values, Autonomy, and Responsibility**			
PHYS 115.C LO. V.1	Demonstrate ethical values, safety provisions, and precautions related to physics in order to use them appropriately in different fields	V.2(الهندسة برنامج الكهربائية Electrical Engineering)	Primary: Group Work (competitive or cooperative / Online or F2F) Additional: Discussion (or similar active learning strategies)	Formative: Oral Exam or Interview (Rubric) Summative: Student Portfolio

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
PHYS 115.CLO. V.2	Act independently and responsibly in both laboratory and field environments in physics applications	V.3(هندسة برنامج المتجددة الطاقة Renewable Energy)	Primary: Lab Work/Experiment Additional: Discussion (or similar active learning strategies)	Formative: Oral Exam or Interview (Rubric) Summative: Student Portfolio

C. Course Content

No.	List of Topics	Contact Hours
1	Vectors.	4
2	Motion in one Dimension (Velocity, Acceleration, one-dimensional motion with constant acceleration).	4
3	Motion in one Dimension (Equations of Kinematics, freely falling bodies).	4
4	Curvilinear Motion (Velocity, acceleration, motion in two dimensions with constant acceleration).	4
5	Curvilinear Motion (projectile motion, relative velocity and relative acceleration).	4
6	Kinetics of Particles (Force, inertia, free body diagrams).	4
7	Circular Motion, and other applications of Newton's Laws (Uniform circular motion, Newton's laws).	4
8	Work and Energy (Work done by a constant force, Work done by a spring).	4
9	Potential Energy and Conservation of energy (Conservative and non-Conservative force).	4
10	Potential Energy and Conservation of energy (change in the P.E, Non-conservative forces).	4
11	Linear Momentum and Collisions (Impulse of a force, impulse-momentum theorem).	4
12	Linear Momentum and Collisions (conservation of momentum, Conservation of linear momentum for two particles.	4
13	Inelastic Collision, Elastic Collision.	4
14	Rotation of a Rigid body about a fixed axis. (Kinematics of rotational system, angular displacement).	4
15	Rotation of a Rigid body about a fixed axis. (angular velocity, angular acceleration, motion with constant angular acceleration).	4
Total		**60**

D. Students Assessment Activities

No.	Assessment Activities*	Assessment Timing (in Week No.)	Percentage of Total Assessment Score
1	Essay (Individual or Group)	13th	10%
2	Oral Exam or Interview (Rubric)	15th	5%
3	Quiz (Online or F2F)	6th, 15th	10%
4	Written Exam (MCQ or Essay / F2F or Online)	9th, 16th	70%
5	Student Portfolio	15th	5%
			100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	- Raymond A. Serway. Physics for Scientists and Engineers. 10th Edition, 2019.
Supportive References	- David Halliday, Robert Resnick, Jearl Walker. Fundamentals of Physics, Extended, 11th Edition, 2018.
Electronic Materials	- https://elearn.oc.edu.sa
Other Learning Materials	None.

2. Required Facilities and Equipment

Items	Resources
Facilities (Classrooms, Laboratories, Exhibition Rooms, Simulation Rooms, etc.)	Lecture Room (5x6 m) supported with at least 25 seats. No laboratories are needed for this course.
Technology Equipment (Projector, Smart Board, Software)	Smart Board, White Board, Data Show and Overhead projector. Laptop supported with Microsoft office.
Other Equipment (Depending on the nature of the specialty)	None.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer Reviewer	Direct (peer classroom observation according to the approved Rubric)
Effectiveness of students' assessment	Faculty/Instructor	Direct (analysis of CLOs assessment results and grade distributions)
Quality of learning resources	Students	Indirect (course evaluation survey)
The extent to which CLOs have been achieved	Faculty/Instructor	Direct (CLOs assessment and analysis of results according to CLOs targets)
	Students	Indirect (Students through course evaluation survey)
Commitment to learning and teaching strategies and assessment methods included in the program and course specifications	Peer Reviewer	Direct (Peer- classroom observation according to the approved Rubric in OC-QMS)
	Department Chair through Students Focus Groups	Indirect (Chair – survey questions to a focus group of students according to OC QMS)
Action Plan Continuity (Closing the Loop)	QAC (Quality Assurance Committee)	Direct (periodic review of course reports and submitting comments to course instructor/coordinator)
Instructor's Support to Students	Students	Indirect (course evaluation survey)

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	Department of Civil Engineering Council
REFERENCE NO.	11
DATE	2023-05-23

Learning outcomes of this course, as well as CLOs/Teaching Strategies/Assessment Methods matrix have been evaluated and reviewed by multiple QC parties according to QC-QMS. You can access results of these final reviews by scanning the QR code on the right, which contains a link to the reviews on QC-E-QMS.

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