هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**General Physics**
Course Code:	**PHYS101**
Program:	**Physics**
Department:	**Physics**
College:	**Science**
Institution:	**Jazan University**
Version:	**2022**
Last Revision Date:	**20-12-2022**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	4				
2. Course type					
a.	University ☐	College ☒	Department☐	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered:	2nd Level/1st Year				
4. Course general Description					
5. Pre-requirements for this course (if any): NIL					
6. Co- requirements for this course (if any): NIL					
7. Course Main Objective(s)					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	33	60%
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning		
4.	Distance learning	22	40%

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	33
2.	Laboratory/Studio	22
3.	Field	-----
4.	Tutorial	-----
5.	Others (specify)	-----
	Total	55

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			
1.1	**State** units of physical quantities, vector quantity, scalar quantity, Newton laws, conservation law of mechanical energy, conservation law of linear momentum. Pascal law, Archimedes's principal, Ohm's law, Doppler effect.	**PLO 1.1**	Lectures, blackboard and visualization, group and interactive guided discussion, Interactive discussion	**Direct** (formative and summative): In class interactive questioning, quizzes, written exams **Indirect**: student survey
1.2	**Define** vector quantity, scalar quantity, meter, kilogram, second, position, displacement, distance, velocity, acceleration, force, mass, weight, work, kinetic energy, potential energy, mechanical energy, power, momentum, pressure, density, buoyant force, electric current, current density, resistivity, audible wave, infrasonic wave, ultrasonic wave.	**PLO 1.2**	Lectures, blackboard and diagram illustration, group discussion, Interactive illustrations-Student contribution	**Direct** (formative and summative): In class interactive questioning, quizzes, written exams **Indirect**: student survey
…				
2.0	Skills			
2.1	**Calculate** dimension of physical quantity, velocity, acceleration, maximum height,	**PLO 2.1**	Lectures, blackboard and visualization, brain storming, group and interactive	Lectures, blackboard and visualization, brain storming, group

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	range, force, weight, work, energy, power, momentum, pressure, density, appearance weight, resistance, current, potential difference, speed of sound, sound frequency.		discussion, Interac tive illustration – Problem based learning	and interactive discussion, Int eractive illustration – Problem based learning
2.2	**Perform** experiments using different analog and digital devices and plot the characteristics of different types of devices	**PLO2.3**	Hands on lab demonstrations- guided discussion – guided discovery	**Direct** (formative and summative):E valuation of assignments, Step-by-step checkpoint assessment of experiment, In lab interactive questioning, quizzes, written exams **Indirect:** student survey
2.3	**Develop** competencies in critical thinking, communication and writing lab reports.	**PLO 2.4**	Lectures, blackboard and visualization, brain storming, group and interactive discussion, Interac tive illustration – Problem based learning	**Direct** (formative and summative): In class interactive questioning, quizzes, written exams **Indirect:** student survey
3.0	Values, autonomy, and responsibility			
3.1	**Demonstrate** abilities to work in groups and bear individual	**PLO3.1**	Interactive and Group discussion,	**Direct** (formative

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	responsibility during lab work, interactive discussion and group assignments		expository and discovery teaching	and summative): In lab interactive questioning **Indirect**: student survey
3.2	**Show** awareness of safety for own and others when dealing with lab equipment	**PLO3.3**	Case study-interactive demonstration-guided discussion	**Direct** (formative and summative): In lab interactive questioning **Indirect**: student survey
...				

C. Course Content

No	List of Topics (Theoretical and Experimental)	Contact Hours
1	Dimensions and units (dimensional analysis and conversion of units).	3
2	Vectors (addition, subtraction, multiplication and components of a vector).	4.5
3	Motion in one dimension (one dimensional motion with constant acceleration).	4.5
4	Newton's laws of motion and solve problems regarding their applications.	4.5
5	Motion in two dimensions (projectile motion).	1.5
6	The work, the power and the energy.	3
7	Linear momentum and collisions.	3
8	Pressure, buoyant force and Archimedes' principle.	4.5
9	Electric current, Ohm's law and specific resistance.	3
10	Speed of sound in solids, speed of sound in fluids and Doppler's effect.	1.5
1	Density of shaped regular solids by accurate measurements	**2**
2	Composition of Forces.	**2**
3	Force and Acceleration –Newton's second law.	**2**
4	Projectile Motion.	**2**
5	Centripetal force experiment.	**2**
6	Determination of acceleration of gravity by Hooks Law and Simple Pendulum.	**2**

7	Density of water using Archimedes' Principle.	**2**
8	Surface tension of water by using metallic ring and capillary tube.	**2**
9	Viscosity of a liquid	**2**
10	Ohm's Law.	**2**
11	Velocity of Sound in Air.	**2**
Total		55

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Home work, student Activities and quizzes	1-10	15
2.	Mid-term exam	6	15
3	Final practical exam	12	20
4	Final exam	13	50

*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	**Physics for Scientists& Engineers with Modern Physics; 7th edition, Serway, Saunders Golden Sunburst Series, 2007.**
Supportive References	**1-University Physics; H. Young and R. Freedman, Addison-Wesley Publishing Company, Inc., 11th edition, 2004.** 2- **Fundamentals of Physics; Halliday, Resnik and Walker, John Wiley and Sons Inc., 2007.**
Electronic Materials	**http://www.wikipedia.org/** **https://spie.org/** **http://hyperphysics.phy-astr.gsu.edu/**
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and laboratories
Technology equipment (projector, smart board, software)	Smart board
Other equipment (depending on the nature of the specialty)	None

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students, Peer and program leader	Indirect (CES)- Indirect peer evaluation
Effectiveness of students assessment	Students, Program assessment committee	Direct/ Indirect
Quality of learning resources	Students, Faculty members	Indirect
The extent to which CLOs have been achieved	Instructor	Direct/Indirect
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	**Council of Physics Department**
REFERENCE NO.	**Phys2215**
DATE	**06/04/1444 H**