

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	General Physics(1)
Course number	PHYS1301
Faculty	
Department	
Course type	Major Needs
Course level	1
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - Physics and Measurement, Motion in One Dimension, Vectors, Motion in Two Dimensions, The Laws of Motion, Circular Motion and Other Applications of Newtons Laws, Energy and Energy Transfer, Potential Energy, Linear Momentum and Collisions, Rotation of a Rigid Object about a Fixed Axis
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Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none"> * apply knowledge of linear motion, forces, energy, and circular motion to explain natural physical processes and related technological advances.AAAaaaa * to develop knowledge and skills in the understanding and use of Newtons Laws. * to develop an understanding of the relationship of work, power, and energy. * to gain knowledge and an understanding of the concept of momentum
Intellectual Skills	<ul style="list-style-type: none"> * Assess the contributions of physics to our evolving understanding of global change and sustainability while placing the development of physics in its historical and cultural context.
Professional Skills	<ul style="list-style-type: none"> * Use an understanding of algebraic mathematics along with physical principles to effectively solve problems encountered in everyday life , further study in science, and in the professional world.

Course Contents

- 1 - Physics and Measurement
- 2 - Motion in One Dimension ,Position, Velocity, and Speed., Instantaneous Velocity and Speed.Acceleration, Motion Diagrams.
- 3 - One-Dimensional Motion with Constant Acceleration, Freely Falling Objects. Kinematic Equations Derived from Calculus.
- 4 - Coordinate Systems, Vector and Scalar Quantities, Some Properties of Vectors, Components of a Vector and Unit Vectors
- 5 - The Position, Velocity, and Acceleration Vectors, Two-Dimensional Motion with Constant Acceleration, Projectile Motion.
- 6 - Newtons First Law and Inertial Frames, Mass, Newtons Second Law. The Gravitational Force and Weight.
- 7 - Define work and kinetic energy and solve problems involving these quantities.
- 8 - Explain gravitational potential energy (GPE) and solve appropriate problems.
- 9 - Principle of conservative and non conservative forces
- 10 - conservation of energy and frictional forces
- 11 - Explain the concept of linear momentum.
- 12 - elastic and inelastic collisions and use these ideas in the solution of appropriate problems
- 13 - develop an understanding of rotational motion
- 14 - the analogy of torque and angular acceleration to force and linear acceleration

Teaching and Learning Methods

- 1 - The course is given as lecture and discussion, where several problems on the material are solved at the end of each unit. In addition some assignments are given to the students as homework.

Teaching and Learning Methods for the Disabled Students

- 1 - Physics for medical students, 2011, Hassan Ashour, Naji Al Dahoudi, Amal Al Kahlout, Al Azhar University-Gaza
- 2 - Physics for Scientists and engineering, 2010, Serway, Cengage

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Reports and Homeworks	week	10%
mid exams	2 hours	40%
Final exam	2 hours	50%

Books and References

Essential books , 9th edition Physics for Scientists and Engineers, Raymond A. Serway