

مختصر توصيف المقرر

(Course Information)

معلومات المقرر*

اسم المقرر:	فيزياء عامة 1
رقم المقرر:	فيز 101
اسم ورقم المتطلب السابق:	--
اسم ورقم المتطلب المرافق:	--
مستوى المقرر:	الأول
الساعات المعتمدة:	3 (0+0+3)
Module Title:	General Physics I
Module ID:	PHYS 101
Prerequisite:	--
Co-requisite:	--
Course Level:	First
Credit Hours:	3 (3+0+0)

Module Description

وصف المقرر :

This course is an introductory course for the fundamental principles of physics in mechanics. The student will be studying the main concepts of: Mechanics, dynamics, gravitation, energy, linear and angular momentum and static electricity.

Module Aims

أهداف المقرر :

1	Understanding the kinematics and dynamics of linear and circular motions, mechanical equilibrium, work, energy, impulse and momentum, oscillation, moment of inertia, torque, rigid bodies, rotational motion in rigid bodies.	1
2	The development of students thinking on how to apply the physical principles to explain the physical phenomena.	2
3	The student should be able to read and describe physical problems, to use mathematics in solving physical problems efficiently.	3

Learning Outcomes:

مخرجات التعليم:

1	Knowledge <ul style="list-style-type: none"> To distinguish between the distance and displacement To distinguish between scalar and vector quantities. To compute the magnitude of displacement for many vectors using the graphic and analysis methods. To know the basic forces in nature. 	1
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	<ul style="list-style-type: none"> • To know the velocity and acceleration and use equations of motion with a constant acceleration. • To distinguish between free fall and projectiles • To know the moment of inertia and explain Newton's laws. • To explain friction of solids and work. • Define energy and relate it to work. • Explain momentum and the law of conservation of momentum. • To know collisions and its types. • Explain the mechanical properties of the material. • Explain the circular motion and compare it with linear motion. • Explain the angular momentum. 	
2	Cognitive Skills <ul style="list-style-type: none"> • Study Newton's laws of motion and learn how to apply them to simple mechanical systems. • Learn the physical concept of energy and how it relates to different physical systems. • Study the phenomena involved in gravitation, wave motion and oscillations. • Study the concepts and phenomena in the fields of heat, thermodynamics and thermal physics. • Learn how to translate realistic physical problems into the equations which describe them; solve these equations for the variables describing the problem; and interpret the results to describe the resulting behavior of the realistic physical system. • Learn to carry out numerical evaluation of algebraic results rapidly and accurately, using appropriate units for physical quantities. • Describe simple physical systems by graphing system variables, and interpret graphs of system variables. • Relate the equations of physics to intuitive concepts. 	2
3	Interpersonal Skills and Responsibility <ul style="list-style-type: none"> • The ability to interact professionally with others, to engage effectively in teamwork, and to function productively on multidisciplinary group projects. • To develop in each student, the good writing skills so that they are able to communicate effectively and clearly • To develop in each student good oral communication skills so that they are able to communicate effectively with others • The report is required to demonstrate proficient organizational skills and writing skills. 	3
4	Communication, Information Technology and Numerical Skills <ul style="list-style-type: none"> • To develop the team working skills necessary to perform effectively. • To develop the ability to argue scientifically with the instructor. • To know how to use the computer program to analyze the data, and make some simulation • To know how to search the web for any updated information concerning the assigned experiment. • To analyze the data with good mathematics and theory. 	4
5	Psychomotor Not applicable.	5

Course Contents:

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
3	1.0	Physics and Measurements
4	1.5	Motion in one dimension
3	1.0	Vectors
6	2.0	Motion in two dimensions
5	1.5	Laws of motion
5	1.5	Circular Motion and Other Applications of Newton's Laws
2	0.5	Energy and energy transfer
4	1.5	Potential energy
3	1.0	Linear momentum and collisions
4	1.5	Rotation of Rigid Object about Fixed Axis
3	1.0	Angular Momentum
3	1.0	Static Equilibrium and Elasticity

Textbook and References:

الكتاب المقرر والمراجع المساندة:

سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
9 th Ed. (2013)	<i>Cengage Learning</i>	<i>Raymond A. Serway and John W. Jewett</i>	Physics for scientists and engineers <i>ISBN-10: 013805715X</i>
سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
9 th Ed. (2011)	<i>Cengage Learning</i>	<i>Raymond A. Serway, Chris Vuille</i>	College Physics <i>ISBN-10:0840062060</i>
9 th Ed. (2012)	<i>John Wiley & Sons</i>	<i>John D. Cutnell, Kenneth W. Johnson</i>	Physics <i>ISBN-10: 0470879521</i>