

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)
<b>Module Title:</b>	General Physics I	
<b>Module ID:</b>	PHYS 101	
<b>Prerequisite:</b>	--	
<b>Co-requisite:</b>	--	
<b>Course Level:</b>	First	
<b>Credit Hours:</b>	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	<b>Knowledge</b> <ul style="list-style-type: none"> <li>To distinguish between the distance and displacement</li> <li>To distinguish between scalar and vector quantities.</li> <li>To compute the magnitude of displacement for many vectors using the graphic and analysis methods.</li> <li>To know the basic forces in nature.</li> </ul>	1
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	<ul style="list-style-type: none"> <li>• To know the velocity and acceleration and use equations of motion with a constant acceleration.</li> <li>• To distinguish between free fall and projectiles</li> <li>• To know the moment of inertia and explain Newton's laws.</li> <li>• To explain friction of solids and work.</li> <li>• Define energy and relate it to work.</li> <li>• Explain momentum and the law of conservation of momentum.</li> <li>• To know collisions and its types.</li> <li>• Explain the mechanical properties of the material.</li> <li>• Explain the circular motion and compare it with linear motion.</li> <li>• Explain the angular momentum.</li> </ul>	
<b>2</b>	<b>Cognitive Skills</b> <ul style="list-style-type: none"> <li>• Study Newton's laws of motion and learn how to apply them to simple mechanical systems.</li> <li>• Learn the physical concept of energy and how it relates to different physical systems.</li> <li>• Study the phenomena involved in gravitation, wave motion and oscillations.</li> <li>• Study the concepts and phenomena in the fields of heat, thermodynamics and thermal physics.</li> <li>• 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.</li> <li>• Learn to carry out numerical evaluation of algebraic results rapidly and accurately, using appropriate units for physical quantities.</li> <li>• Describe simple physical systems by graphing system variables, and interpret graphs of system variables.</li> <li>• Relate the equations of physics to intuitive concepts.</li> </ul>	<b>2</b>
<b>3</b>	<b>Interpersonal Skills and Responsibility</b> <ul style="list-style-type: none"> <li>• The ability to interact professionally with others, to engage effectively in teamwork, and to function productively on multidisciplinary group projects.</li> <li>• To develop in each student, the good writing skills so that they are able to communicate effectively and clearly</li> <li>• To develop in each student good oral communication skills so that they are able to communicate effectively with others</li> <li>• The report is required to demonstrate proficient organizational skills and writing skills.</li> </ul>	<b>3</b>
<b>4</b>	<b>Communication, Information Technology and Numerical Skills</b> <ul style="list-style-type: none"> <li>• To develop the team working skills necessary to perform effectively.</li> <li>• To develop the ability to argue scientifically with the instructor.</li> <li>• To know how to use the computer program to analyze the data, and make some simulation</li> <li>• To know how to search the web for any updated information concerning the assigned experiment.</li> <li>• To analyze the data with good mathematics and theory.</li> </ul>	<b>4</b>
<b>5</b>	<b>Psychomotor</b> Not applicable.	<b>5</b>

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

