



**Jordan University of Science and Technology**  
**Faculty of Science & Arts**  
**Physics Department**

PHY101 General Physics (1)
First Semester 2017-2018

<b>Course Catalog</b>
3 Credit Hours. This course is an introductory course in Newtonian mechanics with topics include: kinematics in one and two dimensions, dynamics (Newton's laws of motion), Newton's laws in circular motion, work and energy, collisions, rotational motion and equilibrium of rigid bodies.

<b>Text Book</b>	
<b>Title</b>	Physics for Scientists and Engineers with Modern physics
<b>Author(s)</b>	John W. Jewett and R. Serway
<b>Edition</b>	9th Edition
<b>Short Name</b>	Serway
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Giancoli	Physics for Scientists and Engineers with Modern Physics by	Douglas C. Giancoli	8th Edition	
Halliday	Fundamental of physics	Halliday and Resnick	6th Edition	
Tipler	Physics for Scientists and Engineers	Tipler	6th Edition	

<b>Instructor</b>	
Name	Dr. Adnan Shariah
Office Location	PH3 L1

Office Hours	Sun : 08:15 - 09:15 Mon : 10:00 - 11:30 Tue : 11:30 - 13:00 Wed : 10:00 - 11:30 Thu : 11:30 - 13:00
Email	shariah@just.edu.jo

<b>Class Schedule &amp; Room</b>
Section 1: Lecture Time: Sun, Tue, Thu : 09:30 - 10:30 Room: NF40

<b>Tentative List of Topics Covered</b>		
<b>Weeks</b>	<b>Topic</b>	<b>References</b>
Weeks 1, 2	Vectors: Coordinate systems, vector and scalar quantities, some properties of vectors, components of a vector and unit vectors, the scalar product of two vectors (7.3), the vector product (11.1)	<b>Ch. 3 From Serway</b>
Weeks 2, 3	Motion in One Dimension: Displacement, velocity and speed, instantaneous velocity and speed, acceleration, one-dimensional motion with constant acceleration, freely falling objects.	<b>Ch. 3 From Serway, Ch. 2 From Giancoli</b>
Week 4	Motion in Two Dimensions: The displacement, velocity and acceleration vectors, two-dimensional motion with constant acceleration, projectile motion, particle in uniform circular motion, Tangential and Radial acceleration	<b>Ch. 4 From Serway</b>
Weeks 5, 6	Newton's laws of Motion: The concept of force, Newton's First law, Newton's Second law, The force of gravity and weight, Newton's Third law, some applications of Newton's law, forces of friction.	<b>Ch. 5 From Serway</b>
Weeks 6, 7	Circular Motion and Other Applications of Newton's Laws: Newton's second law applied to uniform circular motion, nonuniform circular motion.	<b>Ch. 6 From Serway</b>
Weeks 7, 8	Energy of a system: Work done by constant force, work done by varying force, kinetic energy and the work energy theorem, Potential energy of a system, conservative and nonconservative forces, conservative forces and potential energy	<b>Ch. 7 From Serway</b>
Week 9	Conservation of Energy: conservation of mechanical energy, isolated and non isolated systems, work done by nonconservative forces, power	<b>Ch. 8 From Serway</b>
Weeks 10, 11	Linear Momentum and Collisions: Linear momentum and its conservation, impulse and momentum, elastic and inelastic collisions in one dimension, two-dimensional collisions, the center of mass, motion of a system of particles	<b>Ch. 9 From Serway</b>
Weeks 12, 13	Rotational Kinematics and Dynamics: Angular displacement, velocity and acceleration, rotational kinematics, angular and linear quantities, rotational energy, calculation of moments of inertia, torque, relationship between torque and angular acceleration, work, power, and energy in rotational motion, Rolling motion of a rigid object.	<b>Ch. 10 From Serway</b>
Week 14	Rolling Motion and Angular Momentum: Rolling motion of rigid body, angular momentum of a particle, angular momentum of a rotating rigid body, conservation of angular momentum	<b>Ch. 11 From Serway</b>

Week 15	Static Equilibrium and Elasticity: The condition of equilibrium of a rigid object, examples of rigid objects in static equilibrium.	<b>Ch. 12</b> From <b>Serway</b>
Week 16	Final exams starts	

Relationship to Program Student Outcomes (Out of 100%)										
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)

Date Printed: 2017-11-28

Dr. Serway is the coauthor of College Physics, Eleventh Edition; Principles of Physics, Fifth Edition; Essentials of College Physics; Modern Physics, Third Edition; and the high school textbook Physics, published by Holt McDougal. In addition, Dr. Serway has published more than 40 research papers in the field of condensed matter physics and has given more than 60 presentations at professional meetings. In writing this Tenth Edition of Physics for Scientists and Engineers, we continue our ongoing efforts to improve the clarity of presentation and include new pedagogical features that help support the learning and teaching processes. Physics and Measurement comprising the debt reaches across the cosmic gulf thousands of times. Similar calculations show that the bills could span the distance between the Earth and the Sun sixteen times. The strip could encircle the Earth's equator nearly 62 000 times. With successive turns wound edge to edge without overlapping, the dollars would cover a zone centered on the equator and about 4.2 km wide. P1.30. (a). To find the scale size of the nucleus, we multiply by the scaling factor  $d_{\text{nucleus}} / d_{\text{atom}}$ , scale =  $d_{\text{nucleus}} / d_{\text{atom}}$ , real  $d_{\text{atom}} = 300 \text{ ft} = (2.40 \times 10^{15} \text{ m})$  New Listing Physics for Scientists and Engineers: A Strategic Approach with Modern Physics b. Pre-Owned. 4.5 out of 5 stars. 3 product ratings - Physics for Scientists and Engineers: A Strategic Approach with Modern Physics b. C \$105.86. Top Rated Seller. Top Rated Seller. PHYSICS for SCIENTISTS & ENGINEERS with Modern Physics D O U G L A S C. G I A N C O L I PEARSON Upper Saddle Riv Author: Douglas C. Giancoli. 11983 downloads 23653 Views 76MB Size Report. Giancoli, Douglas C. Physics for scientists and engineers with modern physics / Douglas C. Giancoli. 4th ed. p. cm. Includes bibliographical references and index. ISBN 0-13-149508-9 1. Physics—Textbooks. I. Title. QC21.3.G539 2008 530—dc22 2006039431. Physics for Scientists and Engineers with Modern Physics, Seventh Edition edition o Solutions manual to Tipler -Physics for Scientists and Engineers with Modern Physics(5th Edit). 2,958 Pages 1990 23.49 MB 7,862 Downloads New! Solutions manual to Tipler -Physics for Scientists and Engineers with Modern Physics Physics : for scientists and engineers with modern physics. 1,379 Pages 2005 111.19 MB 6,816 Downloads New! Physics : for scientists and engineers with modern physics Paul M Fishbane|Stephen Physics for Engineers and Scientists. 808 Pages 2006 22.59 MB 71,946 Downloads. Prefa

Giancoli, Douglas C. Physics for scientists and engineers with modern physics / Douglas C. Giancoli. 4th ed. p. cm. Includes bibliographical references and index. ISBN 0-13-149508-9 1. Physics—Textbooks. I. Title. QC21.3.G539 2008 530—dc22 2006039431. President, Science: Paul Corey Sponsoring Editor: Christian Botting Executive Development Editor: Karen Karlin Production Editor: Clare Romeo Senior Managing Editor: Scott Disanno Art Director and Interior & Cover Designer: John Christiana Manager, Art Production: Sean Hogan Copy Editor: Jocelyn Phillips Proofreaders: Karen Bosch, Gina Chesel 196 196. Modern physics for scientists and engineers. Jul 13, 2012 07/12. by stephen t. thornton. texts. eye 196. favorite 2. comment 0. Topic: Physics. Books to Borrow. 1 volume (various pagings) : 29 cm Includes index P.4 Electricity and magnetism -- P. 5: Light and optics -- P. 6: Modern physics Topics: Physics, Light, Optics, Electricity, Magnetism. Terms of Service (last updated 12/31/2014). for Scientists & Engineers & Modern Physics, 9th Ed Physics for Scientist Physics for Scientists and Engineers with Modern Physics. 1,584 Pages 2011 36.6 MB 13,914 Downloads New! for Scientists and Engineers with Modern Physics Paul A. Tipler|Gene Mosca Physics for Engineers and Scientists. of Standards . Answers to Selected Odd-Numbered Problems A-45. Modern Physics for Scientists and Physics for Scientists and Engineers: Foundations and Connections, Extended Version with Modern. 1,576 Pages 2016 155.72 MB 4,580 Downloads New! Physics for Scientists and Engineers: Foundations and Connections, Extended Version with Modern Physics for Scientists & Engineers & Modern Physics, 9th Ed.