

**THE UNIVERSITY OF TEXAS AT EL PASO  
COLLEGE OF SCIENCE  
DEPARTMENT OF PHYSICS**

<b>Course #:</b>	PHYS 1403 CRN 11300												
<b>Course Title:</b>	General Physics I												
<b>Credit Hrs:</b>	4.0												
<b>Term:</b>	Fall 2016												
<b>Course Meetings &amp; Location:</b>	MW 9:30 – 10:50 AM, Classroom Building C205												
<b>Prerequisite Courses:</b>	-												
<b>Course Fee: (if applicable)</b>	-												
<b>Instructor:</b>	<b>Dr. Felicia S. Manciu</b>												
<b>Office Location:</b>	PSCI 221B												
<b>Contact Info:</b>	Phone # : (915) 747 8472												
	E-mail address: fsmanciu@utep.edu												
	Fax #: (915) 747 5447												
	Emergency Contact: (915) 747 5715												
<b>Office Hrs:</b>	Monday, Wednesday 1:00 – 3:00 PM												
<b>Textbook(s), Materials:</b>	Main textbook: <i>College Physics a strategic approach</i> by Knight, Jones, and Field (Third Edition).												
<b>Course Objectives (Learning Outcomes):</b>	<p>The objective of PHYS 1403, which is the first part of a sequence of two algebra-based introductory physics courses, is to provide students with a rigorous description of physical phenomena and to improve students' problem-solving abilities.</p> <p>We will study the following topics: Representing Motion, Vectors in Physics, One- and Two-Dimensional Kinematics, Forces, Newton's Laws of Motion, Work and Energy, Potential Energy and Conservative Forces, Energy Conservation, Linear Momentum and Collisions, Rotational Kinematics, Rotational Dynamics, Mechanical Equilibrium, and Equilibrium and Elasticity.</p>												
<b>Grading Policy:</b>	<p>Grades in this course will be based on your scores on two midterm exams, a final exam (comprehensive; but with emphasis on the last part of the course), laboratory, and homework assignments.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Midterm exams:</td> <td>40%</td> <td>(20% each)</td> </tr> <tr> <td>Final exam:</td> <td>25%</td> <td>(comprehensive)</td> </tr> <tr> <td>Laboratory</td> <td colspan="2">15%</td> </tr> <tr> <td>Homework:</td> <td colspan="2">20%</td> </tr> </table>	Midterm exams:	40%	(20% each)	Final exam:	25%	(comprehensive)	Laboratory	15%		Homework:	20%	
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<p><b>Course Activities/Assignments:</b></p>	<p><b>Homework</b></p> <p>It is essential that students become well versed in problem solving methods, which means developing the writing skills to set up a problem, including diagrams and mathematical manipulation to achieve the final answer. A numerical score will be assigned for each homework set based on graded and counted problems.</p> <p>Feel free to form study groups with your classmates and seek help from the lecture professor and any TA during his or her office hours as you attempt to solve the problems. Make sure that you understand the solutions and write them up yourself. <b><u>There is a strong correlation between homework scores and exam scores!</u></b></p> <p><b><u>The textbook is bundled together with the online Mastering Physics (<a href="http://masteringphysics.com">http://masteringphysics.com</a>) resource registration package.</u></b></p> <p><b><u>REGISTER FOR ONLINE HOMEWORK USING THE COURSE ID MPMANCIU36188</u></b></p> <p><b><u>EACH STUDENT WILL NEED HIS OWN REGISTRATION PACKAGE FOR THE HOMEWORK.</u></b></p> <p>The online homework will be announced in advance in the lecture (approximately every week). Each will consist of few problems based on the course material.</p> <p><b>Exams</b></p> <p>Exams will consist of problems very similar to the worked example problems in the text and the assigned homework problems. Exams will be strictly closed-book. You should bring with you a pocket calculator to work out the answers to numerical problems: <b>make sure the battery is charged!</b></p> <p>No cell phones allowed in the exams!</p> <p>The best way to prepare for the exams is to study the example problems and work out the assigned homework problems regularly. You should work as many additional problems from the text as you can: this is the best way to ensure your understanding of the material.</p>
<p><b>Make-up Policy:</b></p>	<p>An extension of the due date for the homework as well as the make-up of missing exams will be granted only in extraordinary circumstances.</p>
<p><b>Attendance Policy:</b></p>	<p>No credit will be granted for just attending the class.</p>
<p><b>Academic Integrity Policy:</b></p>	<p>Please see: <a href="http://academics.utep.edu/Default.aspx?tabid=23785">http://academics.utep.edu/Default.aspx?tabid=23785</a></p>
<p><b>Civility Statement:</b></p>	<ul style="list-style-type: none"> <li>• Cell phones and pagers should be turned off during class time.</li> <li>• When absences occur, it is your responsibility to obtain handouts and notes from your peers. When possible you will complete the activities you have missed.</li> <li>• Academic integrity is to be practiced at all times.</li> </ul>

<b>Disability Statement:</b>	<p>If you have a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, or by email to <a href="mailto:cass@utep.edu">cass@utep.edu</a>, or visit their office located in UTEP Union East Building, Room 106. For additional information, please visit the CASS website at <a href="http://www.sa.utep.edu/cass">www.sa.utep.edu/cass</a>. The student is responsible for presenting to the instructor any accommodation letters and instructions.</p>
<b>Military Statement:</b>	<p>If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor at the beginning of the semester.</p>
<b>Course Schedule:</b>	<p><b><u>CHAPTER 1 - REPRESENTING MOTION</u></b></p> <ul style="list-style-type: none"> <li>• Motion: A First Look</li> <li>• Position and Time: Putting Numbers on Nature</li> <li>• Velocity</li> <li>• A sense of Scale: Significant Figures, Scientific Notation, and Units</li> <li>• Vectors and Motion: A First Look</li> <li>• Where Do We Go From Here?</li> </ul> <p><b><u>CHAPTER 2 - MOTION IN ONE DIMENSION</u></b></p> <ul style="list-style-type: none"> <li>• Describing Motion</li> <li>• Uniform Motion</li> <li>• Instantaneous Velocity</li> <li>• Acceleration</li> <li>• Motion with Constant Acceleration</li> <li>• Solving One-Dimensional Motion Problems</li> <li>• Free Fall</li> </ul> <p><b><u>CHAPTER 3 - VECTORS AND MOTION IN TWO DIMENSIONS</u></b></p> <ul style="list-style-type: none"> <li>• Using Vectors</li> <li>• Using Vectors on Motion Diagrams</li> <li>• Coordinate Systems and Vector Components</li> <li>• Motion on a Ramp</li> <li>• Relative Motion</li> <li>• Motion in Two Dimensions: Projectile Motion</li> <li>• Projectile Motion: Solving Problems</li> <li>• Motion in Two Dimensions: Circular Motion</li> </ul> <p><b><u>CHAPTER 4 – FORCES AND NEWTON’S LAWS OF MOTION</u></b></p> <ul style="list-style-type: none"> <li>• Motion and Forces</li> <li>• A Short Catalog of Forces</li> <li>• Identifying Forces</li> </ul>

**Course Schedule:**

- What Do Forces Do?
- Newton's Second Law
- Free-Body Diagrams
- Newton's Third Law

**CHAPTER 5 – APPLYING NEWTON'S LAWS**

- Equilibrium
- Dynamics and Newton's Second Law
- Mass and Weight
- Normal Forces
- Friction
- Drag
- Interacting Objects
- Ropes and Pulleys

**CHAPTER 6 – CIRCULAR MOTION, ORBITS, AND GRAVITY**

- Uniform Circular Motion
- Dynamics and Uniform Circular Motion
- Apparent Forces in Circular Motion
- Circular Orbits and Weightlessness
- Newton's Law of Gravity
- Gravity and Orbits

**CHAPTER 7 – ROTATIONAL MOTION**

- Describing Circular and Rotational Motion
- The Rotation of a Rigid Body
- Torque
- Gravitational Torque and the Center of Gravity
- Rotational Dynamics and Moment of Inertia
- Using Newton's Second Law for Rotation
- Rolling Motion

**CHAPTER 8 – EQUILIBRIUM AND ELASTICITY**

- Torque and Static Equilibrium
- Stability and Balance
- Springs and Hook's Law
- Stretching and Compressing Materials

**CHAPTER 9 – MOMENTUM**

- Impulse
- Momentum and the Impulse-Momentum Theorem
- Solving Impulse and Momentum Problems
- Conservation of Momentum

**Course Schedule:**

- Inelastic Collisions
- Momentum and Collisions in Two Dimensions
- Angular Momentum

**CHAPTER 10 – ENERGY AND WORK**

- The Basic Energy Model
- Work
- Kinetic Energy
- Potential Energy
- Using the Law of Conservation of Energy
- Energy in Collisions
- Power