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

Course #:	PHYS 1403 CRN: 20731
Course Title:	General Physics I
Credit Hrs:	4.0
Term:	Spring 2022
Course Meetings & Location:	TR 3:00 pm - 04:20 pm
Prerequisite Courses:	-
Course Fee: (if applicable)	-
Instructor:	**Dr. Ahmed El-Gendy**
Office Location:	PSCI 221D
Contact Info:	Phone # : (915) 747 6382
	E-mail address: aelgendy@utep.edu
Office Hrs:	TR 10:00 am – 11:00 am
Textbook(s), Materials:	**Main textbook:** ***College Physics,*** 3rd edition, by Randall D. Knight, Brian Jones, Stuart Field. ***Pearson MasteringPhysics access code*** for homework assignments. A code comes with a new textbook or can be purchased online. The couse ID is **elgendy95610**.
Course Objectives (Learning Outcomes):	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. We will study the following topics: One-Dimensional Kinematics, Vectors in Physics, Two-Dimensional Kinematics, Force and Newton's Laws of Motion, Circular Motion, Orbits, and Gravity, Rotational Kinematics, Rotational Dynamics, Mechanical Equilibrium, Momentum, Work and Energy, Energy Conservation, Elasticity and Oscillations.
Grading Policy:	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.

	weight
Midterm exams	30% (2 Exams)
Final exam	30%
Laboratory	10%
Attendance	10%
Homework	20%

Course Activities/Assignments:	**Homewoork** Homework will be assigned (and graded) in MasteringPhysics. 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. Feel free to form study groups with your classmates and seek help from any lecture instructor 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. **There is a strong correlation between homework scores and exam scores!** **Quizzes** Quizzes will be administered in the online student response system REEF (iClicker). Each quiz will consist of two to three short, multiple choice problems, based on the course material. No make-up quizzes will be given. **Exams** Exams will consist of problems 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: **make sure the battery is charged!** No cell phones or smart phones allowed in the exams! Full credit on exams will be awarded for complete solutions including drawing a figure and deriving necessary relations if appropriate, and for numerically accurate answers with units. Partial credit may be given for correct derivations if the answer is numerically incorrect due to arithmetic errors. No credit will be given for relations written down at random or for numerical answers that are not supported by a reasonably complete derivation. 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.
Make-up Policy:	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.
Attendance Policy:	No credit will be granted for just attending the class.
Academic Integrity Policy:	Acts of academic dishonesty will not be tolerated in this class. Lapses in academic integrity will be referred to the Dean of Students, as required at http://academics.utep.edu/Default.aspx?tabid=23785.
Civility Statement:	• Cell phones and pagers should be turned off during class time. • 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. • Academic integrity is to be practiced at all times.

Disability Statement:	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 cass@utep.edu, or visit their office located in UTEP Union East Building, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass. The student is responsible for presenting to the instructor any accommodation letters and instructions.
Military Statement:	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.
Course Schedule:	Chapter 1: Representing Motion • 1.1 Motion: A First Look • 1.2 Position and Time: Putting Numbers on Nature • 1.3 Velocity • 1.4 A Sense of Scale: Significant Figures, Scientific Notation, and Units • 1.5 Vectors and Motion: A First Look • 1.6 Where Do We Go from Here? Chapter 2: Motion in One Dimension • 2.1 Describing Motion • 2.2 Uniform Motion • 2.3 Instantaneous Velocity • 2.4 Acceleration • 2.5 Motion with Constant Acceleration • 2.6 Solving One-Dimensional Motion Problems • 2.7 Free Fall Chapter 3: Vectors and Motion in Two Dimensions • 3.1 Using Vectors • 3.2 Using Vectors on Motion Diagrams • 3.3 Coordinate Systems and Vector Components • 3.4 Motion on a Ramp • 3.5 Relative Motion • 3.6 Motion in Two Dimensions: Projectile Motion • 3.7 Projectile Motion: Solving Problems • 3.8 Motion in Two Dimensions: Circular Motion

Course Schedule:	Chapter 4: Forces and Newton's Laws of Motion • 4.1 Motion and Forces • 4.2 A Short Catalog of Forces • 4.3 Identifying Forces • 4.4 What Do Forces Do? • 4.5 Newton's Second Law • 4.6 Free-Body Diagrams • 4.7 Newton's Third Law Chapter 5: Applying Newton's Laws • 5.1 Equilibrium • 5.2 Dynamics and Newton's Second Law • 5.3 Mass and Weight • 5.4 Normal Forces • 5.5 Friction • 5.6 Drag • 5.7 Interacting Objects • 5.8 Ropes and Pulleys Chapter 6: Circular Motion, Orbits, and Gravity • 6.1 Uniform Circular Motion • 6.2 Dynamics of Uniform Circular Motion • 6.3 Apparent Forces in Circular Motion • 6.4 Circular Orbits and Weightlessness • 6.5 Newton's Law of Gravity • 6.6 Gravity and Orbits Chapter 7: Rotational Motion • 7.1 Describing Circular and Rotational Motion • 7.2 The Rotation of a Rigid Body • 7.3 Torque • 7.4 Gravitational Torque and the Center of Gravity • 7.5 Rotational Dynamics and Moment of Inertia • 7.6 Using Newton's Second Law for Rotation • 7.7 Rolling Motion

Course Schedule:	Chapter 8: Equilibrium and Elasticity • 8.1 Torque and Static Equilibrium • 8.2 Stability and Balance • 8.3 Springs and Hooke's Law • 8.4 Stretching and Compressing Materials Chapter 9: Momentum • 9.1 Impulse • 9.2 Momentum and the Impulse-Momentum Theorem • 9.3 Solving Impulse and Momentum Problems • 9.4 Conservation of Momentum • 9.5 Inelastic Collisions • 9.6 Momentum and Collisions in Two Dimensions • 9.7 Angular Momentum Chapter 10: Energy and Work • 10.1 The Basic Energy Model • 10.2 Work • 10.3 Kinetic Energy • 10.4 Potential Energy • 10.5 Thermal Energy • 10.6 Using the Law of Conservation of Energy • 10.7 Energy in Collisions • 10.8 Power Chapter 14: Oscillations • 14.1 Equilibrium and Oscillation • 14.2 Linear Restoring Forces and SHM • 14.3 Describing Simple Harmonic Motion • 14.4 Energy in Simple Harmonic Motion • 14.5 Pendulum Motion • 14.6 Damped Oscillations • 14.7 Driven Oscillations and Resonance