

Texas A&M University-Texarkana
University Physics I
PHYS2325

- I. **Course Number:** PHYS 2325
- II. **Course Title:** UNIVERSITY PHYSICS I
- III. **Semester Credit Hours:** 3
- IV. **Instructor:** Dr. F. Vainstein, room 115
- V. **Office Hours:** T, TR 3:45-8:45
- VI. **Phone:** x6652
- VII. **Email:** fvainstein@tamut.edu
- VIII. **Course Description:** This course will cover kinematics, dynamics, work and energy, momentum, rotational motion, angular momentum, fluids and oscillations. Prerequisites: Math 2313 (Calculus 1)
- IX. **Required Textbooks/Resources:** Physics for Scientists and Engineers, 4th Edition (2008), Volume I, Douglas C. Giancoli Pearson Prentice Hall, ISBN-10: 0321553365
- X. **Exemplary Educational Objectives:**

The Texas Higher Education Coordinating Board adopted Exemplary Educational Objectives (EEOs) to establish a common knowledge thread through the courses taught within the Texas Core Curriculum. For PHYS2325 University Physics I, the Natural Sciences the EEOs are:

- To understand and apply method and appropriate technology to the study of natural sciences.
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
- To identify and recognize the differences among competing scientific theories.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.

- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

XI. Student Learner Outcomes:

Students who successfully complete PHYS 2325 will be able to:

- Apply appropriate methods and technology to the study of natural sciences
- Recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
- Identify and recognize the differences among competing scientific theories.
- Discuss and evaluate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
- Discuss and evaluate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

XII. Course Outline:

Physics and Measurement

Kinematics: Motion in One Dimension, Vectors

Kinematics: Motion in Two or Three Dimensions

Dynamics: Newton's Laws of Motion

Using Newton's Laws: Friction

Using Newton's Laws: Circular Motion

Universal Gravitation

Work and Energy

Conservation of Energy

Linear Momentum and Collisions

Rotational Motion

Angular Momentum

Static Equilibrium

Fluids

Oscillations

These topics are going to be covered in class. The main focus will be on problem solving.

XIII. Course Requirements: The instructor expects the students to attend the classes and do the home work assignments.

XIV. Methods of Evaluation: Exams I and II will count 30% each and the final exam 40%

XV. Grading Scale:

Percentage	Grade
90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

XVI. Faculty Office Location and Contact Policy: TBA

XVII. Complete Course Schedule:

Week 1: Physics and Measurement

Week 2: Kinematics: Motion in One Dimension, Vectors

Week 3: Kinematics: Motion in Two or Three Dimensions

Week 4: Dynamics: Newton's Laws of Motion

Week 5: Using Newton's Laws: Friction

Week 6: Using Newton's Laws: Circular Motion. Test 1.

Week 7: Universal Gravitation

Week 8: Work and Energy

Week 9: Conservation of Energy

Week 10: Linear Momentum and Collisions

Week 11: Rotational Motion

Week 12: Angular Momentum. Test 2.

Week 13: Static Equilibrium

Week 14: Fluids

Week 15: Oscillations

Week 16: Final Exam

XVIII. Student Participation:

a. Participation Policy: Students are encouraged to ask questions and form study groups.

b. Course Etiquette: Students are expected to be polite and respectful

c. Discussion Board Standards: NA

Include the following required statements in each course syllabus.

XIV. Disability Accommodations: Students with disabilities may request reasonable accommodations through the A&M-Texarkana Disability Services Office by calling 903-223-3062.

XV. Academic Integrity: Academic honesty is expected of students enrolled in this course. Cheating on examinations, unauthorized collaboration, falsification of research data, plagiarism, and undocumented use of materials from any source constitute academic dishonesty and may be grounds for a grade of 'F' in the course and/or disciplinary actions. For additional information, see the university catalog.

XVI. A&M-Texarkana Email Address: Upon application to Texas A&M University-Texarkana an individual will be assigned an A&M-Texarkana email account. This email account will be used to deliver official university correspondence. Each individual is responsible for information sent and received via the university email account and is expected to check the official A&M-Texarkana email account on a frequent and consistent basis. Faculty and students are required to utilize the university email account when communicating about coursework.

Include the following explanation for web-enhanced and online courses.

XVII. Student Technical Assistance: NA