

GENERAL COURSE OUTLINE
TROY STATE UNIVERSITY SYSTEM
MAIN CAMPUS
Updated: Spring 2003

PHY 2262 -- Physics with Calculus I

TEXT: *Physics for Scientists and Engineers, 4th Edition.* By Serway. Sanders Publishing.

CATALOG DESCRIPTION

Principles, and laws of mechanics, thermodynamics, and wave motion. Prerequisite: MTH 1125 (Calculus I); Corequisite: PHY L262 (Physics with Calculus I Lab)

COURSE OBJECTIVES

1. The laws and principles of basic physics as they relate to the interaction of matter and energy and their conservation
2. Measurement and mathematical concepts
3. Vectors
4. Motion in one dimension
5. Motion in two dimensions
6. The laws of motion
7. Work and energy
8. Potential energy
9. Conservation of energy
10. Linear momentum and collisions
11. Circular motion and other applications of Newton's laws
12. Torque and static equilibrium of a rigid body
13. Oscillatory motion
14. Mechanics of solids and fluids
15. Scientific facts and the history, principles, issues, generalizations, and the laws of physics, contributions from different countries and cultures to the knowledge of physics, and the relationship of physics to other sciences and their implications and applications.
16. The role and implications of physics for daily living and techniques for addressing global and ethical issues in science.
17. Thermal physics
18. Heat
19. Laws of thermodynamics

To demonstrate an ability to--

20. Apply the laws and principles of basic physics to the solution of problems within a calculus framework

OR

21. Recognize the fundamental issues involved in problems of physics
22. Successfully solve physics problems
23. Address global and ethical issues in physics and apply scientific processes to the solution of problems encountered in daily activities

ADDITIONAL SERVICES: AMERICANS WITH DISABILITIES ACT: Any student whose disabilities fall within ADA must inform the instructor at the beginning of the term of any special needs or equipment necessary to accomplish the requirements for this course. Students who have or may be dealing with a disability or learning difficulty should speak with the instructor, contact the Office of Adaptive Needs Program (Trojan Center 215), or call 670-3220/3221. Various accommodations are available through the Adaptive Needs Program. The faculty in the School of Business makes every effort to accommodate unique and special needs of students with respect to speech, hearing, vision, seating, or other possible disabling conditions. Please notify the instructor as soon as possible of requested accommodations or ways to help.

CHEATING POLICY: The SGA and the Board of Trustees have approved a TSU Honor Code. The University has adopted a firm policy for incidents of academic dishonesty with potentially severe and long-term consequences for violators. All exams and outside work are to be considered as individual assignments unless instructed otherwise in writing. No unauthorized [i.e., by the instructor, beforehand] assistance may be given or received on any work submitted for grading. Giving unauthorized assistance is also considered “cheating”. The first incident will result in no credit for that assignment and the second incident will result in failure in the course. Students should be aware of the TSU Honor Code, the Academic Code, and the Penalties for Misconduct as published in the Oracle [available online from TSU homepage]. A friendly note of caution: my operational definition of plagiarism is five or more words used together by a second author in the same sequence as presented by their first author, without attributing the idea to the first author. Ideas and theoretical concepts should be attributed to their originator. Using quotation marks for longer strings of words is required. The consequences for plagiarism are harsh: one small occurrence, one letter grade, two small occurrences, two letter grades, etc. However, a single flagrant attempt at deception, once discovered, will result in an automatic failure in the course. You must give your work credibility by citing credible references in support of premises, facts, and expert opinions. In three words: Prudence, Credibility, and Integrity.

ATTENDANCE POLICY

University Policy: In registering for classes at the University, students accept responsibility for attending scheduled class meetings, completing assignments on time, and contributing to class discussion and exploration of ideas.

A student will be excused for class absence for circumstances beyond the student's control or if the student has been required to attend an activity sponsored by the University. Faculty members who sponsor activities that require class absences must send a list of student names to each member concerned at least three days before the scheduled absence.

Faculty policy: Faculty members may levy academic penalties upon unexcused absences; however, such penalties for unexcused absences will be a part of each course syllabus and will be distributed to each class at the beginning of each term, and a copy filed in the department office.

INCOMPLETE WORK POLICY

Incomplete grades are assigned at the discretion of the instructor. Students should refer to the appropriate bulletin for policies regarding the removal of incomplete grades.

GRADING SCALE

90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

GENERAL COURSE OUTLINE
TROY STATE UNIVERSITY SYSTEM
MAIN CAMPUS
Update: Winter 1998

PHY L262 -- Physics with Calculus I Laboratory (1-2)

TEXT: *Physics Laboratory Experiments Fourth Edition*; by Wilson, Heath Publishing.

CATALOG DESCRIPTION

Laboratory work emphasizes basic principles of lecture topics, the use of measuring instruments and the interpretation of data. Corequisite: PHY 2262 (Physics with Calculus I).

COURSE OBJECTIVES

To demonstrate a knowledge of--

1. Measurement and error
2. Acceleration of gravity
3. Projectile motion
4. Force and acceleration
5. Static and kinetic friction
6. Conservation of energy
7. Rotational motion and energy
8. Archimedes' Principle and specific gravity
9. Young's modulus
10. Specific heat

To demonstrate an ability to--

11. Investigate scientific phenomenon, interpret findings, and communicate them to others
12. Set up and conduct physics experiments

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