

Modern Physics Syllabus – Fall 2011

The mission of Abilene Christian University is to educate students
for Christian service and leadership throughout the world.

Course Information:

PHYS 230 – Modern Physics, MWF 10-11, Foster Science Building 355

Required textbook – Modern Physics (Fifth Edition), by P. A. Tipler and R. A. Llewellyn

Textbook home page – <http://www.whfreeman.com/tiplermodernphysics5e>

Catalog description – Special relativity, invariance principles, foundations of quantum mechanics, atomic spectra, molecular physics, nuclear physics, and elementary particles.

Contact Information:

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Objectives

After completing this course students will:

- be prepared to participate in cutting-edge physics research
- be able to explain the basis and consequences of special relativity
- understand the theories and experiments of atomic theory
- know the fundamental ideas of quantum mechanics
- be able to effectively communicate physics research results

Policies

Concurrent enrollment is required in Modern Physics Laboratory (PHYS 231). The labs will start **this week**. A separate syllabus will be given for this course. Note that a laboratory notebook will be required.

Homework will generally be assigned every week, with homework problems taken primarily from the textbook. Regular quizzes will be given to test comprehension of reading assignments. There will be a midterm and a final exam. Additionally, since publishing papers and giving presentations are an **essential** component of a scientist's career, students will practice these skills by making an in-class presentation and writing a paper.

Attendance is a crucial factor to your success in this class. Except in the case of University-excused absences:

- late homework will not be accepted
- students who are absent for a quiz or exam will receive a zero

It is thus a good idea to attend every class period.

Schedule:

Midterm exam	week of Oct. 17 th
Final exam	Dec. 13 th 10-11:45

The in-class presentations will be given throughout the semester to follow topics discussed in lecture. Students will be allowed to sign-up for presentations beginning the third week of class.

Grading Policy:

Homework	30 %
Quizzes	10 %
Midterm	20 %
Projects	20 %
Final	20 %

The lecture (PHYS 230) and lab (PHYS 231) are graded separately. The midterm and final exams will be graded on a curve. Final grades will be based on the following percentages:

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

Academic Integrity:

Violations of academic integrity and other forms of cheating, as defined in ACU's Academic Integrity Policy, involve the intention to deceive or mislead or misrepresent, and therefore are a form of lying and represent actions contrary to the behavioral norms that flow from the nature of God. Violations will be addressed as described in the Policy. While the university enforces the Policy, the most powerful motive for integrity and truthfulness comes from one's desire to imitate God's nature in our lives. Every member of the faculty, staff, and student body is responsible for protecting the integrity of learning, scholarship, and research.

If "extra credit" or special exemptions from the grading policy are given to only to a single student or a small group of students, then they receive an unfair advantage over the rest of the class. Requests for extra credit, particularly at the end of the semester, can be considered in some circumstances as a form of cheating. Fairness demands that all students in a class are given the same opportunities. Therefore, no special extra credit will be given.