

PHY 306

Relativity and Modern Physics

Dillard University - Fall 2003

Meeting Times:

STERN 217

T R 3:00p – 4:15p

*** Due to a schedule conflict, the class meeting time must be moved. I suggest **T R 1:00p – 2:15p** ***

Instructor: Rob Salgado Office: Stern 307A Voice: (504)-816-4510	E-mail: rsalgado@dillard.edu Instant-Messengers: AOL, MSN, Yahoo: dillardphysics (do not email here)	Office hours: -to be announced
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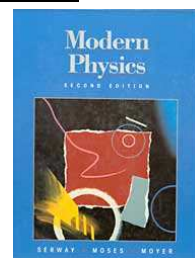
Catalog Description:

PHY 306 Relativity and Modern Physics (3 credits)

Review of classical physics, the experimental foundations of quantum physics, Schrodinger equations and the wave functions. Atomic and molecular spectra, special relativity, electricity and radiation, introductory nuclear physics.

Class meets three hours per week.

[Prerequisite: PHY 230 (General Physics III) and junior standing, MAT 203 (Analytic Geometry and Calculus III).]



Required Textbook:

“Modern Physics” (2nd edition) by Serway, Moses, and Moyer (published by Brooks/Cole: ISBN 0-03-001547-2)

This textbook is required. **(For each announced show-me-your-textbook day, not having the textbook will earn a penalty of 2%.)**

Highly-recommended supplement:

“Schaum's Outline of Modern Physics” by Ronald Gautreau (published by McGraw-Hill: ISBN 0-07-024830-3)



Electronic Materials:

I will maintain a website (for now: <http://physics.syr.edu/~salgado/306/>) that lists the assigned problems and solutions. I will also try to make available the whiteboard/PowerPoint notes and any computer source code (e.g., Python, Maple) that I use for simulations or computations.

Homework:

Homework will be assigned but will not be collected. We will discuss the homework in class. Exam and quiz problems are generally based on homework problems, textbook problems, and textbook examples.

Most of the learning you do in this course is done by doing homework problems outside of class!

You are encouraged to work on the homework with other students.

However, be sure that you can do the problems *by yourself* since you'll be working on quizzes and exams *by yourself*.

If you need help with your homework, please visit me (with your textbook and your notebook and with proof that you have tried the problems) during Office Hours... the sooner the better.

Classroom Rules:

Come to class **ON TIME**. **(Unexcused tardiness will earn a penalty of 1%.)**

Attendance is **REQUIRED**.

“The University recognizes that a student may miss a class for legitimate reasons. In such cases these absences are excusable; however, the student must complete the Student Absence Form.”...

“A professor may drop a student with 3 or more unexcused absences from a course.” (2003-2005 University Catalog, page 15)

Note that your attendance is recorded on the official midterm and final grade sheets.

“Academic dishonesty will not be tolerated.” (2003-2005 University Catalog, page 15)

Come to class PREPARED and EQUIPPED, having read or written any assignments.

Limit all discussions to the PHYSICS topic under discussion.

Turn OFF all phones, pagers, radios, and other disruptive devices. **(Disruptiveness will earn a penalty of 1%.)**

Treat each other with RESPECT.

Grades (for the lecture portion):

10% ATTENDANCE **(Each unexcused absence will earn a penalty of 3%.)**

Absences must be excused within one week with a note from Academic Affairs.)

20% END-OF-CHAPTER QUIZZES (FORMAT: multiple-choice questions, a short problem, and vocabulary definitions for the *next* chapter)

20% MIDTERM EXAM (FORMAT: conceptual and computational multiple-choice questions, two or three short problems)

20% PRESENTATION (FORMAT: oral/PowerPoint summarizing details of a later chapter in our textbook)

30% FINAL EXAM (FORMAT: like two regular exams but cumulative)

A≥88%, B≥76%, C≥64%, D≥50%, F<50%. This class is not graded on a curve.

Borderline cases (between two letter grades): If your exams show an upward trend, your grade may be nudged upwards.

There may be penalties (described above) for being tardy, absent, disruptive, or unprepared.

Exams and Quizzes: QUIZZES are generally given at end of each chapter. They will begin at the start of the class period and will end promptly after ten minutes of that period. [No makeups or extensions. This will be strictly enforced. Be on time.] After every two or three chapters, we will have an EXAM on these chapters. There is a cumulative one-hour MIDTERM and a cumulative two-hour FINAL.

Missed exams and quizzes: There are **no** makeup exams or quizzes. There are **no** exceptions.

If you are absent for an exam or quiz, within one week, you must present to me a written excuse from Academic Affairs.

Only if that excuse is valid, **your final exam will carry the weight of your missed exam or quiz.**

Otherwise, you will get no credit for the missed exam or quiz.

Dates you should be aware of:

Labor Day (Mon, Sept 1 ** no class **)

Midterm Period (Oct 13-17)

Founder's Day (Sun, Oct 19)

Academic Advising Day (Wed, Oct 29 ** no class **)

Last Day to Withdraw (Fri, Nov 21)

Thanksgiving Break (Thu-Fri, Nov 27-28 ** no class **)

Last Day of Classes: (Wed, Dec 3)

Exam Period: Friday, (Fri-Thu, Dec 5-10) [the final is only given on the date and time assigned by the University --- do **not** make early travel plans]

Sequence of PHY 306 topics:

Ch 1 Relativity

Ch 2 The Quantum Theory of Light

Ch 3 The Particle Nature of Matter

Ch 4 Matter Waves

Ch 5 Quantum Mechanics in One Dimension

***Ch 6 Tunneling Phenomena (* time permitting)**

Student-Selected Chapters for Presentation

August							Rough Schedule
Su	Mo	Tu	We	Th	Fr	Sa	
		26		28			Ch 1
		September					
	[]	2		4			
		9		11			
		16		18			Ch 2
		23		25			
		30					Ch 3
		October					
				2			
		7		9			Ch 4
		---14---		---16---			
		21		23			Ch 5
		28		30			
		November					
		4		6			
		11		13			Ch 6
		18		20			Presentations...
		25		[]			
		December					
		2			[5		
	8	9	10]				

Highly-recommended texts you may wish to consult:

"Physics for Scientists and Engineers with Modern Physics" by Raymond A. Serway and Robert J. Beichner

"Modern Physics" by Kenneth Krane

"Modern Physics" by Paul Tipler

"Concepts of Modern Physics" by Arthur Besier