

PHYS 4310: Modern Physics II

TTVN, Spring '08

Dr. David W. Craig, WTAMU

2008-01-16

1 Meeting times and location

This a TTVN course transmitted from WTAMU on MWF at 11-11:50 AM CST. For the local students the classroom will be HLC 56 (basement of the library.)

2 Contact and transmission information

My email is dcraig@wtamu.edu and I can accept PDFs, Word files, and most graphics formats produced by scanners if you do your work on paper and scan it.

I can also receive faxes at the physics fax number 806-651-5255.

3 Course goals

To gain a basic understanding of the applications of elementary quantum mechanics.

4 Course requirements

Modern I (WTAMU 3310, TECP 3343), Calculus II, General Physics (Calculus-based).

5 Learning objectives

We will overview the application of elementary quantum mechanics to molecular, solid-state, nuclear and elementary particle physics.

We will cover chapters 11-15 of Serway, with some supplementary material. Since this is a fairly short set of mostly applied chapters, we may be able to touch on some more modern “modern” physics topics. Some possible topics are the history of nuclear weapons, chaos and fractals, and shock waves.

6 Text

The textbook for the course is *Modern Physics* 3rd ed., by Serway, Moses and Moyer, ISBN 0-534-49339-4. It is the same text used for Modern I.

There will also be supplemental material from the internet, particularly concerning contemporary topics.

7 Topics

8 Course area on WTClass

The notes and assignments for this class will be placed on my departmental home page at <http://homedirs.wtamu.edu/~dcraig/PHYS4310/resources.html>

9 Evaluation (Grading)

9.1 Homework

Problems (mostly from the text) will be assigned as practice for the tests and as topics to be discussed actively in class. Cooperation is encouraged but students should turn in their own copies via fax, email, or directly to the instructor.

9.2 Exams

There will be *four* exams and a final. The exams will be open-book, take-home format with students on the honor system for individual work. Questions about the test problems should be directed to the instructor during TTVN sessions or via e-mail. The tentative due dates for the exams are

Mid-Feb	Chapter 11-12 Molecular Structure, Solid State
Early March	Chapter 13-14 Nuclear Physics, Applications
Early April	Nuclear Applications, Particle Physics
Late April	Cosmology, Other Topics?

The final will be similar and will have an emphasis on the topics covered later in the course, including chapter 15.

9.3 Item breakdown

Tests 1-4: 20% each for a total of	80%
Final Exam:	20% (Comprehensive)

Homework is your responsibility to prepare for the tests, homework solutions will be presented in class/online.

Grade scale: 90-100% A, 89-80% B, 79-70% C, 69-60% D, below 60%: F.

If you have unexpected severe personal problems late in the term and request an incomplete, please do so in writing. If it is granted, we will need to fill out a contract together.

9.4 Academic Honesty

The academic honesty policy laid out in the student handbook will be followed.