

Physics 709

Syllabus Fall 2015

General Information

Professor: Dr. Josh Gladden

email: jgladden@olemiss.edu; Phone: 915-7428

Office: NCPA 2005

Office Hours: by appointment (email is best!)

Website: www.phy.olemiss.edu/~jgladden/phys709/

Lecture: T Th 9:30 – 10:45 AM in NCPA Classroom (1128)

Required Text: *Theoretical Mechanics of Particles and Continua*,
Fetter and Walecka (Dover, 2004)

Course Description

This is a standard core course in the graduate curriculum for Physics. In this course we will learn advanced methods of analyzing the mechanical properties and dynamics of particles, systems of particles, and extended bodies in both translational, bounded (periodic), and rotational motion. Toward the end we will learn Hamilton's methods in classical mechanics which provides a fluid transition to concepts in quantum mechanics. We will cover chapters 1-6 in the textbook.

Significant goals of this course are for students to advance and expand their mathematical tool kit and improve their analytical reasoning. Part of this consists of "applying equations" and "getting the right result", but students will be evaluated on a broader set of skills, including the way they analyze a problem and place it in context, as well as how they write about it. In order to take full advantage of the lectures, you should read the relevant sections of the book *BOTH before and after the lecture*.

Evaluation

Weights

Homework ...20%

Test 125%

Test 225%

Final Exam ...30%

Letter Grades

Typical letter grade

break points:

A: 88% - 100%

B: 75% - 87%

C: 65% - 74%

D: 55% - 64%

F: < 55%

(subject to change)

Homework: Typically several problem sets will be assigned out of each chapter. Some of the problems are rather difficult and involved, so it is best to start the problems early so you have time to work them out and/or seek help. (See note under **Group Work** below.)

Tests: There will be two midterm tests and a final exam, consisting of short answer style and problems to be worked out. Students will be allowed to use a calculator (although I doubt you will use it). To allow more flexibility on time, tests will be given outside of the normal meeting time (probably evenings).

Final Exam: A cumulative final exam will be given on Thurs., Dec. 10 from 8-11 AM in our normal meeting space. Details on the topics stressed and exam policies will be given later in the semester.

Course Policies

Absences

Students are expected to attend each lecture unless you have justification. If you must miss a lecture, make contact with me as soon as possible. Absences from tests count as zeros, unless they are justified. If you must be absent during a test for a University sponsored event, you **MUST** discuss this me before the test date. In the case of an unexpected emergency, you must make contact with me as soon as possible and have documentation.

Academic Integrity (Cheating)

Academic integrity is essential to all the values upon which the University is founded. Students must therefore embody academic honesty in all aspects of their work. A student with a documented case of plagiarism or academic cheating in this course will receive the grade of F for the course and may face disciplinary action by the University, including expulsion. You should know that I take this **SERIOUSLY**.

Group Work

Physics is very rarely done alone. I encourage you to form study groups in preparation for homework assignments and tests. **HOWEVER**, the homework assignments should be the work of the individual student. If you can not do the homework, you will not do well on the tests!

Changes

Any changes will be brought to your attention and posted on the web site.
