

33-331 Physical Mechanics I  
Fall Semester, 2009

INSTRUCTOR

Prof. Robert B. Griffiths

Office: WEH 6309, Phone: 268-2765, Email: rgrif@cmu.edu

CLASS MEETINGS

Lectures: Monday, Wednesday, Friday, 2:30-3:20 pm in Wean Hall 7316

Recitation: Tuesday, 8:30-9:20 am in Wean Hall 7316

WEB PAGE

<http://www.andrew.cmu.edu/course/33-331>

TEXTBOOK

The textbook is Thornton and Marion, *Classical Dynamics of Particles and Systems*, 5th edition, Thomson Brooks/Cole, 2004.

COURSE AIM and CONTENTS

The aim is to achieve *mastery* of the material in the part of the textbook indicated below, in the sense that at the end of the course you should be able to solve, with the book closed, any problem of the sort given at the end of one of the chapters. A year after the course you should still be able to recognize that a problem of this sort can be solved by the methods you learned this term, and solve it, perhaps with some help from the textbook or some other comparable source.

This semester we will cover parts of Chs. 2 and 3, and most of Chs. 5, 6, 7, 8, 9 of Thornton and Marion. Chapter 1 will be referred to when particular mathematical tools are needed. For more details see the *tentative* schedule on the other side.

COURSE REQUIREMENTS

Attendance is expected at all lectures and at the weekly recitation class. There may be in class quizzes if attendance starts to flag.

Problems will be assigned weekly. Those turned in late will be penalized 20% per day, or may be refused if too late. You are welcome to discuss problems with anyone. However, *the assignment is then to be written up separately by each individual*. This includes writing your own computer program (for plotting, or whatever) when that is required. Copying what others have written and turning it in as your own work is a violation of the ethical standards of the scientific community, and of the university policy on cheating and plagiarism.

There will be three hour exams during the term and one final exam.

Grades will be determined in accordance with the following weighting:

Hour exams: 30%

Final exam: 30%

Assignments and in class quizzes: 40%

OTHER READING

The following are on reserve in the Engineering and Science library:

H. Goldstein, *Classical Mechanics*, 2d edition, Addison-Wesley, 1980.

This is a standard text, a bit more advanced and sometimes a bit more enlightening than Thornton and Marion.

G. Gallavotti, *The Elements of Mechanics*, Springer-Verlag, 1983.

This is for people who want the mathematics done properly, i's dotted and t's crossed.