

Phys 321: Theoretical Mechanics I
Spring 2006
Monday, Wednesday, Friday 10:00-10:50; PAS 224

• **Course Description**

This class offers an introduction to Theoretical Mechanics. After a quick review of Newtonian Mechanics, we will introduce the principles of Lagrange and Hamilton Dynamics and study a number of applications related to orbital dynamics, harmonic oscillations, scattering problems, and motions in non-inertial frames.

The only real prerequisite to this class is Math 223 (Vector Calculus) and at least a concurrent registration to Math 254 (Introduction to Ordinary Differential Equations). Students should be familiar with the calculus of functions with many variables, as well as with basic concepts related to ordinary differential equations.

• **Textbooks**

The suggested text is *Classical Dynamics of Particles and Systems*, by Thornton & Marion (5th Edition). We will cover chapters 2-10 of the text.

• **Assignments and Grades**

The course grade will be based on 6 homeworks (30%), two 50-minute mid-term exams (20%+20%), and a final exam (20%). A score of 90% will guarantee an A.

The **homeworks will be due on Fridays at 10am, in class, just before the beginning of lecture** (approximately one homework set every other week). **No credit will be given for late homeworks** but the lowest score of the 6 homeworks will not count towards the course grade. The homeworks will be posted on the web page, approximately one week before they are due. The due dates can be found on the schedule page.

There will be **two 50-minute midterms** during class on **Wednesday, February 8** and on **Monday, March 20**, as well as a **final exam on May 8, 11am-1pm**, which will cover the material we discussed during the whole semester.

• **Other Important Issues**

Class attendance is optional. Please come to class only if you find it useful. However, if you do come to class, please give your full attention and participate in the discussion. Moreover, you are responsible to learn of any announcements I make in class, which may or may not appear on the web page. Finally, I will not repeat to any absent student on a person-to-person basis material that I covered in class, unless there is a documented reason for the absence.

Course Web Site: <http://www.physics.arizona.edu/~dpsaltis/Phys321>

We will probably have a TA. More information TBA in class.

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Office hours: Monday-Wednesday 11:00-12:00 (or by appointment)