

Phys 422: Theoretical Mechanics II
Spring 2004
Monday, Wednesday, Friday 12:00-12:50; PAS 220

• **Course Description**

This is a class on advanced classical mechanics. It is a continuation of Phys 321: Theoretical Mechanics I. It will cover a number of topics including the physics of coupled harmonic oscillators, inertia and stress tensors, the physics of continuum mechanics, and an introduction to fluid dynamics. Students should be familiar with the calculus of functions with many variables, as well as with ordinary and partial differential equations.

• **Textbooks**

The suggested text is *Classical Dynamics of Particles and Systems*, by Thornton & Marion (5th Edition). After a quick review of Lagrange and Hamilton dynamics, we will start with Chapter 11, Dynamics of Rigid Bodies. Towards the last third of the class, when we will discuss fluid dynamics, we will use lecture notes.

• **Assignments**

The course grade will be based on 7 homeworks (30%), a 50-minute mid-term exam (30%), and a final exam (40%). A score of 90% will guarantee an A.

The **homeworks will be due on Fridays at 12 noon, in class** (approximately one homework set every other week). **No credit will be given for late homeworks** but the lowest score of the 7 homeworks will not count towards the course grade.

There will be **one 50-minute midterm** during class on **Monday, March 8** and a **final exam**, which will cover the material we discussed during the whole semester.

Course Web Site: <http://www.physics.arizona.edu/~dpsaltis/Phys422>

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