

PHYS 423 Classical Mechanics

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Newtonian mechanics. Mathematical formulation of the dynamics of a particle and systems of particles, including applications to atomic physics. Mechanics of continuous media using Fourier series. Introduction to generalized coordinates and the methods of Lagrange and Hamilton.

[University Policy]

- Class MW 11:30-12:45
- Office Hours M 12:45-2:00 or by appt
- Textbook “Classical Mechanics” by Taylor
- [Homepage]
- Course material will be on webcampus
- [University Policy]
- Grading will be distributed among:
 - Homework. I will assign problems, unless stated otherwise, problems are due the next monday class period.
 - Tests. There will be a midterm roughly half way through the semester (Oct 18).
 - Final is on Wednesday December 13th from 10:10 am to 12:10 pm.

Week	Chapter	Subject
1	1	Newton's Laws
2	2	Projectiles and Charged Particles
4	3	Momentum and Angular Momentum
5	4	Energy
7	5	Oscillations
8		Midterm (Oct 18)
9	6	Calculus of Variations
10	7	Lagrange's Equations
12	8	Two Body Problems
13	9	Noninertial Frames
14	10	Rotational Motion
		Final Exam Dec 13 at 10:10

Table 1: Chapters Covered — may be updated

Learning Outcomes

The students will have a broad understanding of Classical Mechanics. Particular skills will include applications of the following: Newton's Laws, Lagrangian and Hamiltonian formulations, noninertial frames, rigid bodies, coupled oscillators and scattering.

1 Grading

The midterm will be a take home exam but the final will be at the assigned time, in class final.

Final grade will be based on midterm and final exams. Homework will be taken into consideration if you are at a grade boundary.