

# Physics 310 - Intermediate Mechanics - Fall 2006

**Instructor:** Jones  
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**URL:** <http://www.physics.purdue.edu/~mjones/phys310>  
**Title:** Intermediate Mechanics  
**Offering:** Fall 2006, Class 4, cr. 4.  
**Room:** PHYS 110  
**Time:** Currently 9:30-11:20 Tuesday and Thursday  
**Office hours:** Phys 378/337, 11:30-12:30 Tuesday and Thursday or by appointment  
**Prerequisites:** Math 261 and two terms of general physics  
**Text:** Fowles and Cassiday, *Analytical Mechanics*, 7th ed.  
**Description:** Review of vector calculus, rectilinear motion in one dimension, oscillations, motion in three dimensions, non-inertial reference frames, gravitating systems, systems of particles, motion of rigid bodies, Lagrangian mechanics, systems of oscillating particles.

## Proposed schedule:

Week 1	Aug 21	Review of calculus, vectors, coordinate systems
2	Aug 28	Motion in one dimension
3	Sep 4	Oscillations
4	Sep 11	Harmonic motion
5	Sep 18	Motion in 3 dimensions
6	Sep 25	Non-inertial reference frames
7	Oct 2	Central forces and gravitation
8	Oct 9	(Reading break) (First mid-term exam)
9	Oct 16	Systems of particles
10	Oct 23	Rigid bodies
11	Oct 30	Rigid bodies (cont.)
12	Nov 6	Motion of rigid bodies
13	Nov 13	Motion of rigid bodies (cont.)
14	Nov 20	(Second mid-term exam)
15	Nov 27	Lagrangian mechanics
16	Dec 4	Oscillating systems
17	Dec 11	Final exam week

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## Grading:

The final grade will be based on two mid-term exams, a final exam, assignments and in-class quizzes. These will be weighted as follows:

Quizzes	100
Assignments	200
First mid-term	100
Second mid-term	100
Final exam	200
<hr/> Total	<hr/> 700

The quizzes are primarily intended to determine whether you are keeping up with the material. They will only test your understanding of the most basic concepts that we cover and not your ability to carry out detailed calculations. There will be no make-up quizzes and a missed quiz counts as zero. However, we will drop the lowest two scores for the quizzes when calculating the final grade.

There will be two mid-term exams and one final exam. There will be no scheduled make-up exams so if they are missed then they will be assigned a mark of zero. However, if it is advantageous to your final mark, the mark on one mid-term will be ignored when calculating the final grade, in which case the total score would be out of 600.

There will be approximately six homework assignments. Late homework will be accepted but will be penalized as follows:

Lateness	Grade reduction
1 day	25%
2 days	35%
3 days	50%
4 days	60%
5 days	75%
1 week	—

Homework that is over one week late will not be graded.

Confused? Ask for more explanation in class.