

Physics 363, Classical Mechanics

Fall 2006 Quarter, 12 noon MWRF

Instructor: Milton From

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Website: follow the links from <http://newton.physics.wvu.edu/from/>

Reference Materials: The main text for the course is *Classical Mechanics* by John R. Taylor. Brief solutions to odd numbered problems are given in the back of the text. Another good reference, with lots of solved problems, is *Schaum's Outline of Theoretical Mechanics* by Murray R. Spiegel (\$30 at Amazon). In addition, the library has several rows of excellent Mechanics texts at QA805, Wilson 4W. Particularly good authors to look for include Fowles, Corben, and Goldstein.

We will occasionally make use of *Mathematica* symbolic algebra software in class and in assignments. Please familiarize yourself with this software if you have not already used it in previous courses. A good *Mathematica* reference text is *Getting Started with Mathematic* by Cheung et al. (\$39 at Amazon).

The course website contains useful links including the course syllabus, weekly assignment listings, and assignment and test solutions.

Approximate Schedule (Last revision: September 26, 2006):

Week	Dates	Text chapters	Assignments		Tests
			No.	Due date (Mondays)	
1	Sept 27-29	1 Newton's Laws (Reading assignment!) 2 Projectiles, Charged particles	1	Oct 2	
2	Oct 2-6	3 Momentum	2	Oct 9	
3	Oct 9-13	4 Energy	3	Oct 16	
4	Oct 16-20	5 Oscillations	4	Oct 23	Monday, Oct 16
5	Oct 23-27	6 Calculus of Variations	5	Oct 30	
6	Oct 30-Nov 3	7 Lagrange's Equations	6	Nov 6	
7	Nov 6-8 (F is a holiday)	8 Central force, 2-body	8	Nov 13	
8	Nov 13-17	9 Non-inertial frames	9	Nov 20	Monday, Nov 13
9	Nov 20 (WF are holidays)	10 Rotation of rigid bodies	10	Nov 27	

10	Nov 27-Dec 1	10 Rotation of rigid bodies 11 Coupled oscillators	11	Dec 4	
11	Dec 4-8	11 Coupled oscillators	12	Dec 11	
Exam Week	Friday Dec 15, 8-10am				Final Exam

Homework: There will be a weekly assignment due on Mondays. These assignments will not be handed in or graded however it is essential that you do them. Random quizzes will be based closely on these assignments. Some test questions will also resemble assignment problems. I encourage you to work with other students on the homework and consult the solutions only as a last resort. If you have worked seriously at a problem and are not still not making progress please come see me for help!

Tests: There will be two mid-term tests, and a final two-hour cumulative exam. You may use the text during the tests and exam. No other reference materials will be allowed.

Quizzes: There will be several short (10 minute) quizzes given at random points throughout the course. These will be closely related to the previous few days' lectures and/or assignments.

Grades:

Quizzes 15% (average of best 5)
 2 Tests 50% (25% each)
 Final Exam 35%

LETTER GRADE SCALE

Percentage	90-100	85-89	80-84	77-79	73-76	70-72	67-69	63-66	60-62	57-59	53-56	<53
Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F