



PHYS.4130/5130
 Classical Mechanics
 Olsen 503, TuTh 11am–12.15am
 Lecturer: Andriy Danylov
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 Office Hours: MW 12.00-1.00pm
 TuTh 1.30–2.30pm

Course Description and Goals:



This is a one-semester course is devoted to the foundation of classical mechanics at the upper undergraduate level. Covering topics include Newtonian and Lagrangian formalisms, central force problems, coupled small oscillations and eigenvalue problems, and introductory concepts of rigid body motion.

It is expected that you are familiar with the Course Policy as presented. It should be kept among your notes where it is readily available for reference. Seek clarification if necessary. No food is allowed in the classroom.

Course Format:

One-hour lectures will be conducted on Tuesday and Thursday from 11:00 am to 12:15 pm. Discussions in class are encouraged. Some problems from homeworks will be presented by students in class.

Make-up Work:

Attendance to all classes is mandatory. Illness on the day of a class must be verified by submission of a letter from a physician or nurse showing that you were seen prior to or on the day of class and attest that your illness made you unable to attend the schedule period.

Course Outline

Dates	Chapter	95.413/513 Classical Mechanics, Schedule
September	1	Newton's Laws of Motion
September	3	Momentum and Angular Momentum
October	4	Energy
Mid October	1,3,4	Midterm Exam 1
October	5	Oscillations
October	6	Calculus of Variations
October	7	Lagrange's Equations
Mid November	5,6,7	Midterm Exam 2
November	8	Two-Body Central Force Problems
November	9	Non-Inertial Frames
December	11	Coupled Oscillators and Normal Modes
If time permits	10	Rotational Motion of Rigid Bodies

Disabilities Policies:

If you have either a learning disabilities or severe physical handicap you may be eligible for extra time during exam and the final. Discuss your situation with the UMass-Lowell Counseling Center. A properly filled out Learning Disability accommodation Notification form must be filled out and a copy given to your instructor before we can help you in this regard. All information will be kept confidential.

Grading Policy:

Grades will comprise homework, two one-hour exams, and a three-hour final. The course grade will consist of 25% for homeworks, 20% for the first one-hour exam, 20% for the second one-hour exam, and 35% for the final examination

<i>Exam I</i>	- 20%
<i>Exam II</i>	- 20%
<i>Homework</i>	- 25%
<i>Final Exam</i>	- 35%

Required Text:

"Classical Mechanics" by J. Taylor
(University Science Books, 2005)
ISBN 978-1-891389-22-1, 786 pages

Other resources:

"Classical dynamics of particles and systems"
by Marion and Thornton.