PHYS.6110 Classical Mechanics
TuTh 11am–12.15am
Olney 115
Lecturer: Andriy Danylov
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Office Hours: Tu Th 2-3pm

Course Description and Goals:

This is a one-semester course is devoted to the foundation of classical mechanics at the graduate level. Covering topics include Newtonian, Lagrangian, and Hamiltonian formalisms, central force problems, coupled small oscillations and eigenvalue problems, and 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 in Olney 115. Discussions in class are encouraged.

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*	*PHYS.6110 Classical Mechanics, Schedule*
1/20	*1*	*Review of elementary principles*
2/01	*2*	*Lagrangian Mechanics*
2/20	*3*	*Central force problems*
Mid March	*1,2,3*	*Midterm Exam 1*
3/13	*6*	*Oscillations and stability*
4/08	*8*	*Hamiltonian mechanics*
4/15	*9*	*Canonical transformations*
Mid April	*6,8,9*	*Midterm Exam 2*
4/22	*10*	*Hamiltonian-Jacobi theory*
4/29	*4*	*Kinematics of rigid body motion*
If time permits	*5*	*The rigid body equations of motion*

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 homework, 20% for the first one-hour exam, 20% for the second one-hour exam, and 35% for the final examination

Exam I	- 20%
Exam II	- 20%
Homework	- 25%
Final Exam	- 35%

Required Text: *"Classical Mechanics"*

by Herbert Goldstein, Charles P. Poole, Jr., John L. Safko, 3rd edition, Addison Wesley, (2002).