Fall 2016
COURSE POLICY
Classical Mechanics (PHYS.4130/5130)
3 credits

Semester: Fall 2016
Room: Olsen Hall 114 – North Campus
Time: Tu, Th: 11:00am – 12:15pm

Course Coordinator
Dr. Andriy Danylov
Office: Olney 127
Phone: 978-934-3703
Email: Andriy_Danylov@uml.edu

Office Hours: M - Th: 2.00–3.00 PM

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.

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.

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

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<th>Dates</th>
<th>Chapter</th>
<th>95.413/513 Classical Mechanics, Schedule</th>
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<tbody>
<tr>
<td>September</td>
<td>1</td>
<td>Newton’s Laws of Motion</td>
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<td>September</td>
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<td>Momentum and Angular Momentum</td>
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<td>October</td>
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<td>Energy</td>
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<td>Mid October</td>
<td>1,3,4</td>
<td>Midterm Exam 1</td>
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<td>October</td>
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<td>Oscillations</td>
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<td>October</td>
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<td>Calculus of Variations</td>
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<td>Lagrange’s Equations</td>
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<td>Mid November</td>
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<td>Two-Body Central Force Problems</td>
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<td>November</td>
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<td>Non-Inertial Frames</td>
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<td>December</td>
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<td>Coupled Oscillators and Normal Modes</td>
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<td>If time permits</td>
<td>10</td>
<td>Rotational Motion of Rigid Bodies</td>
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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.

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