University of Alaska Fairbanks

PHYS F341X Classical Mechanics

Fall 2016

Credits: 4.0

Lectures: REIC 207 MWF 2:15-3:15 pm
Recitation: REIC 207 T 1:15-2:15 pm

Instructor: Dr. Roman Makarevich
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Course Content: Newtonian mechanics, conserved mechanical quantities, motion of systems of particles, rigid body statics and dynamics, moving and accelerated coordinate systems, rigid body rotations, and Lagrangian mechanics.

Prerequisites: PHYS220, PHYS301; or permission of instructor.

Materials Needed:

Required Text: Classical Mechanics by J.R. Taylor, University Science Books, 1st edition, 2005.

Instructor's lecture notes: Provided via Blackboard as pdf files.

Supplementary readings:
Classical dynamics of particles and systems by Marion, Thornton, Brooks/Cole, 1995.
Mechanics by K. R. Symon, Prentice Hall, 3rd edition, 2001.
Introduction to Classical Mechanics by A. Ayra, Prentice Hall, 1998.

Grading: The course grade will consist of the following components (though I reserve the right to make grade adjustments based on performance trends):

Lecture Participation	10%
Homework	30 %
Exam I	15 %
Exam II	15 %
Final Exam	30 %

Lectures: In the course of every lecture you may be asked various questions. You will be required to answer all of them either using ABCD voting card (which you should bring to every lecture) and/or in writing. You will be also required to participate at in-class discussions with your peers. At the end of every Fridays lecture (or Wednesdays lecture when Friday is a holiday or in-class exam) you will be required to submit a lecture participation answer sheet covering all questions for that week. It will be graded on all-or-nothing basis for every lecture separately. No credit may be also given if you do not vote or participate in discussions. **No late or someone else's lecture answer sheets will be accepted.**

Homework: There will be approximately one homework assignment per week. The assignment will be posted by Monday on the Blackboard and will be due in on the following Wednesday by 2:15 pm. **All homework assignments must be turned in directly to me in class**. **No emailed or otherwise electronically-submitted assignments will be accepted**. Late assignments will be generally marked down as follows: late up to 1 day minus 10%, late up to 7 days minus 10% per one day late, after 7 days late minus 100%. The exceptions will be assignments due on October 5, November 9, and December 7 that will **not** be accepted late.

Hour Exams: Two exams will be given during the Friday lecture as follows:

Exam I: October 7
Exam II: November 11

The exams will be closed-book, but you will be given most of the needed equations. The exams will be graded and handed back as soon as possible.

Final Exam: The final exam will be at 1:00-3:00 pm, Wednesday, December 14, 2016. It will cover the entire course (Chapters 1-10), with some emphasis on the more recent material. The final will be closed-book, but you will be given most of the needed equations.

Every student will obtain a raw score out of 100%. I assign letter grades based on raw scores and a curve developed for this class. A raw score above 90% will be at least an A, above 80% will be at least a B, above 70% will be at least a C, above 60% will be at least a D. No +/- grades will be given with a possible exception of A+, A-, and B+.

Instructor-Initiated Withdrawals: Any time from Friday, September 23 to and including Friday, November 4, the instructor will exercise the right to withdraw a student from PHYS F341X for any of the following reasons: (1) Exam I is missed without an excused absence, or (2) the current cumulative grade for lecture participation is less than 50%, or (3) the current cumulative homework grade is less 50%, or (4) the current cumulative overall grade is less 50%. This is this class's definition of "...has not participated substantially in the course."

Absences and Make-Up Tests and Assignments:

Make-up tests will be allowed for legitimate reasons, which you **must discuss** with the professor. An unexplained absence from a test will result in a zero. If you anticipate an absence (intercollegiate sports, travel on military or University business), talk to your professor before the test to make arrangements. If the absence is unexpected (illness, family or personal calamity, cold weather transportation difficulty), talk with the professor at the earliest possible opportunity. Come prepared to document your particular calamity. In any case, you must take the make-up test as soon as possible of your return to health. If you are to take a make-up test/assignment, we expect that you have no knowledge of the original test/assignment.

Lectures: Make-up lecture participation questions cannot be given. You will be allowed up to 3 zero scores for individual lecture scores without penalty.

Homework: No make-up assignments will be given. You will be required to submit a homework solution **on or earlier than** the due date in any case. Late assignments will marked down as described above.

Hour Exams: Talk to the professor to make the necessary arrangements if you miss the test for a legitimate reason.

Final Exam: An incomplete grade may be given in some situations as governed by the University regulations. You will be required to take a final test at the time agreed.

Special Needs: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We will work with the Office of Disabilities Services to provide reasonable accommodation to students with disabilities.

Plagiarism: Plagiarism and cheating are matters of serious concern for students and academic institutions. This is true in this class as well. The UAF Honor Code (or Student Code of Conduct) defines academic standards expected at the University of Alaska Fairbanks which will be followed in this class. (Taken from the UAF plagiarism web site, which has many links with good information about this topic)

Complaints and Concerns: You are always welcome to talk to me about anything, however, if you have a non-subject matter question or concern that cannot be resolved by me, contact the department chair, Dr. Renate Wackerbauer, Physics Department Office, Room REIC 106.