

2013

350 Theoretical Mechanics

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Theoretical Mechanics
PHYS 350
Fall Semester, 2013

Instructor: Dr. Jonathan Morris
Office: 107 Lindner Hall
Phone: 745-3633
Email: morrisd3@xavier.edu
Lectures: M W F 11am in 105 Logan Hall
Office Hours: T R 10:00 am; W 2:30 pm and by appointment

Text: *Analytical Mechanics*, 7th ed., by Fowles and Cassiday (6th edition will do)

The Course

The course will proceed roughly as outlined in the Table of Contents of **Fowles and Cassiday**, with some rearrangement of topics as deemed necessary and with supplemental material supplied by the instructor. There will be three midterm exams given during the course of the semester and one final exam given in the normal lecture room (105 Logan) on **Wednesday, December 18th, 2013 from 10:00 AM - 11:50 PM.**

Final dates for the midterm exams will be announced in class (tentative dates can be found below). Homework will be assigned and collected in class and will count toward the final grade.

Course Objectives

After completing this course, students should be able to understand conceptual ideas within the topics of rectilinear motion, oscillations, motion in three dimensions, gravitation, many-body problems and rigid body motion. The student should be at a level where they have developed problem solving skills which include the ability to analyze events and possess suitable level of quantitative literacy that allows for a description of motion of particles and objects in the World around them.

Lecture format

Lectures will be delivered in person at the allocated time and location. If this is not possible due to the planned absence of the instructor then video lectures *may* be posted online for you to watch. Replacement of lectures with video lectures will be announced before hand either in class or via email. The material covered in these video lectures will be examined in the same way that material from a normal lecture and therefore you are expected to learn from them as you would a normal lecture. When normal lectures are possible then video lectures will not be provided as an alternative.

Lecture notes will be available to download in Adobe pdf format from the Canvas course page. Students should log into the course page regularly for changes to course policy (syllabus, exam dates) or changes to course material (lecture notes, course announcements).

*****The instructor reserves the right to alter this syllabus if circumstances dictate*****

Homework

Homework assignments will be announced mid-lecture and the deadline for handing in the work will be at the beginning of the PHYS350 lecture on Monday following the lecture. If Monday is a holiday then the homework is due at the beginning of the earliest future lecture (e.g. homework due on Labor Day, Sept. 2nd, is to be handed in on Wednesday Sept. 4th). Homework should be neatly handwritten showing your methods (some marks will be earned for correct methods). For missed homework please see grading policy.

Tentative Mid Term Exam Dates

These dates are penciled in but can change! Any changes will be announced in class.

| | |
|---------|------------------------------------|
| Exam #1 | Monday September 16 th |
| Exam #2 | Friday October 11 th |
| Exam #3 | Wednesday November 6 th |

Grading Policy:

Please see the department grading policy on the physics web site for details on the assignment of grades. Go to www.xavier.edu/physics and click on Department Information in the bar on the right hand side. The +/- grading scale will be used as listed on the following page. Students will be able to check their grades via the Canvas course page.

All exams and homework will count towards the final grade. The dates of midterm exams will be announced in class in advance and the material covered in the midterm exams (chapter numbers from the book) will also be announced. The final exam will be comprehensive and will cover all of the material that we have worked through in lectures/homework during the semester.

Failure to complete homework or to attend an exam will result in a mark of zero for that assignment. If you have a valid reason for missing the assignment then the mark on the final exam will be scaled to account for the missed assignment.

In case of emergencies on or before the exam date, all reasonable attempts to contact me must be made. Contact details can be found at the beginning of this syllabus.

The final grade will be determined by the following grading scheme.

| | |
|------------------|--------------|
| Midterm exam #1: | 20 % |
| Midterm exam #2: | 20 % |
| Midterm exam #3: | 20 % |
| Final exam: | 30 % |
| Homework: | 10 % |
| Total | 100 % |

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Homework assignments must be turned in on time for credit to be given. Homework credit will be reduced by up to 50% for each week that the assignments are late and will **not** be accepted if more than 2 weeks late or after the final lecture whichever is sooner. Students are encouraged to work together on homework in the collaborative sense.

Class attendance is expected.

Grading Scale

| | |
|----------|----|
| 93 - 100 | A |
| 90 - 93 | A- |
| 87 - 90 | B+ |
| 83 - 87 | B |
| 80 - 83 | B- |
| 77 - 80 | C+ |
| 73 - 77 | C |
| 70 - 73 | C- |
| 67 - 70 | D+ |
| 63 - 67 | D |
| 60 - 63 | D- |
| Below 60 | F |

Academic Honesty

Please read section 2.3.9.1 of the student handbook (available at www.xavier.edu/student-integrity) to see the University policy on academic honesty (this includes cheating, plagiarism, unauthorized assistance in assignments and tests, falsification of results and material). Cheating on any assignment **does not** help yourself whether it is now or in the future, the instructor, your colleagues or the University so please do not cheat.

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