

Course Syllabus

Phys410 - Classical Mechanics

University of Maryland, College Park

Spring 2022

4 credits; Prerequisite: Phys373 [also 273, 274]

Class meetings: TTh 11:00am -12:15pm, F 10am -10:50am; PHY 0405

Professor: Ted Jacobson, jacobson@umd.edu; (<mailto:jacobson@umd.edu>) Office hours: After every class; and Monday, 5-6pm, or by appointment (in person or via Zoom)

TA: Navya Gupta, navyag@umd.edu; Office hours by appointment

Tutoring sessions with TA: Thursday, 4-5:30pm, PSC 3150

Textbook: *Classical Mechanics*, John R. Taylor

There is only one edition but there are multiple printings, currently the 9th. The publisher told me that as far as they can tell the book became perfect starting with the 4th printing. I've compiled the Errata for the 1st, 2nd, or 3rd printings [here](https://umd.instructure.com/courses/1321380/files/66357043/download?download_frd=1) ↓ (https://umd.instructure.com/courses/1321380/files/66357043/download?download_frd=1).

Course notes by TJ: posted at Piazza and updated continually. I plan to publish these notes in some form, so please share any and all feedback, about typos, questions, and clarifications.

Topics: From *Taylor*: Chapters 1,3,4 briefly reviewed; Chapters 6-9 mostly covered; Section 11.5, Chapter 13; selections from Chapter 16. Additional topics from TJnotes, not in *Taylor* or done differently: special relativity, general relativity, adiabatic invariants, continuous elastic systems, and fluid mechanics.

Course website: Course plan, announcements, assignments, grades, lecture tablet notes, class recordings, etc. will be posted at ELMS, <https://elms.umd.edu> (<https://elms.umd.edu>)

Piazza course forum: <https://piazza.com/umd/spring2022/phys410>

(<https://piazza.com/umd/spring2022/phys410>). We'll use Piazza for supplements and resources, and for questions and discussion. I strongly encourage everyone to make use of Piazza. It is super convenient, it's active any day and hour, and enhances learning for everyone. Please note that you may want to change your Piazza settings to receive notifications more often. You can choose to get them whenever something is posted, or to be sent a digest after a specified amount of time.

E-mail: Students are responsible for making sure I have their correct email address and checking their email daily. Important messages will sometimes be sent to the class by email via Piazza or ELMS.

Lectures: Students are responsible for material presented in lecture that is not in the book. If you miss a class you should find out what we did.

Homework: The homework in this course serves to engage wit, apply, and master the material covered in class and readings, but also to broaden the course and touch on applications.

+ Usually assigned weekly, usually due Friday, 6pm.

+ Upload in a single pdf file to ELMS before the deadline.

+ Late homework accepted only under dire circumstances: if you know (or *should* know) it will be impossible to turn in an assignment on time, you must discuss this with me **in advance of the due date**.

+ Some problems will be graded for accuracy, some for effort. In the total score for each assignment, equal "size" problems will be weighted equally, regardless of whether graded for accuracy or effort.

+ You are allowed and encouraged to discuss homework with others, use Piazza, ask the professor or TA for guidance, and consult other books and online sources regarding the basic material.

However ...

+ **It is forbidden to make use of solutions from a classmate, or found online or elsewhere.** *The write-up you turn in should be your own formulation, and should reflect your own understanding, and you should be prepared to explain and defend it in detail on your own. Violation of this policy would 1) be a violation of the UMD Code of Academic Integrity and may lead to a referral to the Student Honor Council with severe consequences (see below); 2) result in a grade of 0 on the homework assignment; and 3) leave you without a solid comprehension of the material and ill-prepared for exams. It is often easy for the TA and professor to detect copying, so don't fool yourself into thinking it won't be noticed! **PLEASE don't sabotage yourself by academic dishonesty! It's unfair to your classmates who are not cheating, it will leave you ill-prepared for the exams, and it can have devastating punitive consequences.***

Quizzes: There may be some ungraded but required practice quizzes.

Exams: Midterm, and Final Exam (Thursday, May 12, 08:00am-10:00am). The Final Exam is *not cumulative*. **Make-up exams must be requested well in advance of the exam**; the reason for the absence must be documented and in accord with University policy (see <https://www.ugst.umd.edu/courserelatedpolicies.html> (<https://www.ugst.umd.edu/courserelatedpolicies.html>)). *If an exam is unexpectedly canceled (due to technical problems) it is automatically rescheduled for the next class period.*

Grading: The grade weights are 25% for homework, and {30%, 45%} or {45%, 30%} for {mid-term, final exam} whichever maximizes the total score for each student. Any ungraded practice quizzes are

required. The lowest homework score will be dropped. The letter grades corresponding to numerical scores will be determined after reviewing the class performance, consistent with the grade definitions indicating mastery of the material: A: excellent, B: good, C: adequate, D: borderline.

Help: Seek help *immediately* if you don't understand the material or can't solve the problems. Help is available via Piazza 24/7, and from the TA and the Professor directly at Office hours or by appointment. Don't wait until just before the homework is due or the exams! At <https://www.ugst.umd.edu/courserelatedpolicies.html> (<https://www.ugst.umd.edu/courserelatedpolicies.html>) you'll find resources and counseling services that can help with learning, study skills, and mental health issues.

Academic integrity: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. Academic dishonesty is a serious offense that may result in suspension or expulsion from the university. In addition to any other action taken, a grade of "XF", denoting "failure due to academic dishonesty," will normally be recorded on the transcript of the offending student. For more information on the Code of Academic Integrity or the Student Honor Council, visit <http://www.shc.umd.edu>. (<http://www.shc.umd.edu>).

Course Summary:

Date	Details	Due
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