

Mechanics: From Oscillations to Chaos
PHYB54
Winter 2017

Professor Hanno Rein

Lecture	Thursdays 12:00 - 14:00 HW 215
Tutorial	Wednesdays 12:00 - 13:00 (Group 1) 11:00 - 12:00 (Group 2) MW 160
E-mail	<code>hanno.rein@utoronto.ca</code>
Website	http://rein.utsc.utoronto.ca
Office	SW 504 C Office hours: Thursday, 10am-11am or by appointment
Textbooks	The lectures will closely follow the textbook Classical Mechanics by John R. Taylor.
Tutorials and problem sets	<p>Roughly each week, you will be given a problem set at the end of the lecture or the end of the tutorial. The deadline for submission is the following week on Monday at noon. This is a hard deadline. We will discuss the problems the following day in the tutorial. The problems will closely follow the course material and are designed to prepare you for the tests and the exam.</p> <p>You may work in groups to solve the problems but you need to hand in your own set of answers. Photocopying and copy-and-pasting is not sufficient.</p> <p>Most importantly, if you submit an answer, you need to understand it. Be prepare to present your answer at the blackboard during the tutorial. The presenter will be selected randomly among all students who have submitted a correct answer. Failure to be able to present a submitted (and correct) answer will nullify all answers to the week's problem set.</p>
Final Exam	The final exam will take place during the exam period. The exam may include, but is not restricted to, material from all lectures and all tutorials. You can use a non-programmable calculator.

Grading Scheme

The final grade will be calculated as follows:

Assignments	20 points
Quizzes	15 points
Midterm	20 points
Final exam	45 points

Absences

In the case of a problem that supports an absence to a tutorial session or an inability to hand in a problem set before the tutorial session, your grade will be calculated on the basis of all other tutorial work. In the case of a problem that supports the absence to one of the tests, your grade will be calculated by increasing the weight of the other test and the final exam. Valid and official supporting documentation must be submitted within five business days of the missed tutorial or test.

Accessibility

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in SW302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

Academic Integrity

Academic integrity is one of the cornerstones of the University of Toronto. It is critically important both to maintain our community which honours the values of honesty, trust, respect, fairness and responsibility and to protect you, the students within this community, and the value of the degree towards which you are all working so diligently. Detailed information about how to act with academic integrity, the Code of Behaviour on Academic Matters, and the processes by which allegations of academic misconduct are resolved can be found online: <http://www.artsci.utoronto.ca/osai/students>.

According to Section B of the University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) which all students are expected to know and respect, it is an offence for students to:

- To use someone else's ideas or words in their own work without acknowledging that those ideas/words are not their own with a citation and quotation marks, i.e. to commit plagiarism.
- To include false, misleading or concocted citations in their work.
- To obtain unauthorized assistance on any assignment.
- To provide unauthorized assistance to another student. This includes showing another student completed work.
- To submit their own work for credit in more than one course without the permission of the instructor.
- To falsify or alter any documentation required by the University. This includes, but is not limited to, doctor's notes.
- To use or possess an unauthorized aid in any test or exam.

Specificly to this course, please be reminded that you need to understand every solution that you submit. If you work together on an assignment, you still have to be able to present your submission.

There are other offences covered under the Code, but these are by far the most common. Please respect these rules and the values which they protect. Offences against academic integrity will be dealt with according to the procedures outlined in the Code of Behaviour on Academic Matters.

Tentative Class Schedule

Week	Dates	Tutorial (Wednesday)	Lecture (Thursday)
1	Jan 4/5	No tutorial	Newton's Laws of motion Chapter 1
2	Jan 11/12	Quiz 1	Projectiles and Charged Particles Chapter 2
3	Jan 18/19	Assignment 1	Momentum and Angular Momentum Chapter 3
4	Jan 25/26	Assignment 2	Energy Chapter 4
5	Feb 1/2	Assignment 3	Oscillations Chapter 5
6	Feb 7/8	Assignment 4	Oscillations Chapter 5
7	Feb 15/16	Quiz 2	Numerical project
8	Feb 22/23		Reading Week
9	Mar 1/2	Numerical project	Central Force Problems Chapter 8
10	Mar 8/9	Midterm discussion	Coupled Oscillators Chapter 11
11	Mar 15/16	Assignment 5	Chaos Chapter 12
12	Mar 22/23	Quiz 3	Chaos Chapter 12
13	Mar 29/30	Assignment 6	TBD