PHY180H1F - Classical Mechanics
Fall 2020 Syllabus

PHY180 on Quercus

Instructors: Prof. Joseph H. Thywissen (lecture), Dr. Brian Wilson (lab)
Contact: For physics questions, **public** message on Piazza Q&A; for private (non-physics) issues, use the private message feature on Piazza.
No-email communication policy: Please **route all communication related to PHY180 through Piazza**. Direct emails, and Quercus messages, will not be checked.
Office hours: to be offered by Prof. Thywissen and by TAs, held online, times tba.
Graduate Teaching Assistants (TAs) will run tutorial sections (labelled PRA on your schedule), grade labs, and grade exams. Their contact information will be given on Piazza, under Resources/Staff/.

Course Delivery:
Online asynchronous lectures. *Up to 2h of content per week.*
Online synchronous Q&A: 2p Monday, 9a Tuesday, 5p Thursday (Toronto time zone)
Lectures start at 10 minutes past the hour, except when used for a test (when start is at 9:00am).
Introductory Q&A: Thursday 10 September 2020. *Delivery platform*: Zoom (link posted on Piazza)
Asynchronous elements:
-Textbook readings in "Principles and Practice of Physics", 2nd edition, by Eric Mazur
-Problem sets, taken on publisher's site ("MyLab and Mastering"), linked through Quercus
-Q&A (discussion) online on Piazza: PHY180 on Piazza
-Laboratory work, documented through lab reports

Student technical requirements:
(A) A University of Toronto email address (to sign on to these platforms, however we will not use email for this course), and access to Acorn for university administrative tools and resources;
(B) Installed access to Quercus, Piazza, Zoom, and the textbook site (described below);
(C) Sufficient internet connectivity, computational power, and audio quality to participate on Zoom; and sufficient internet connectivity and computational power to take a real-time online test on Quercus;
(D) The ability to scan and submit .pdf version of written assignments for assessment

Suggested setup steps:
(1) Get your utoronto.ca email address
(2) Find this course at https://q.utoronto.ca/courses/171427/
(3) Purchase your textbook access card at https://tinyurl.com/yxunn7sy and log onto Pearson "MyLab and Mastering" site through Quercus.
(4) Create an account on Piazza through the menu item on Quercus, or directly at https://piazza.com/utoronto.ca/fall2020/phy180
[optionally: on the Account Setting wheel, adjust your Class & Email Settings to reduce volume, and Piazza Network Preferences to reduce ads.]
(5) Download the apps for Canvas Student, Piazza, Pearson eText, and Zoom onto your device(s)

Course Description:
This course on Classical Mechanics gives students the basic background for advanced Physics and Engineering. The primary subjects of the course are the motion of particles and rigid bodies, how that motion is created or changed by forces, and applicable conservation laws. The word "Classical" means we will only discuss speeds much slower than the speed of light (non-relativistic speeds) and only macroscopic forces (i.e., no quantum mechanics). Topics covered are Kinematics,

Forces, Energy, Momentum, Rotation, and Oscillations. There are both lecture and lab components to this course. They are run nearly independently, but with obvious topical overlap. The goals of the lecture course are to understand the physics and math behind it. The goals of the lab course are to understand what constitutes a measurement, and how to test a theoretical prediction. There is far less structure to lab assignments, and thus more room for independent and creative work.

Required co-requisite:
MAT194H1 Calculus (or equivalent)

Textbook and online homework platform: We will be using "Principles and Practice of Physics", 2nd edition, by Eric Mazur. There is only one way to acquire this textbook:
https://tinyurl.com/yxunn7sy
The C$65 purchase price includes both the ebook and the (required) online homework system.

Marking Scheme:
40% "testlets" (four 1-hour term tests, given throughout the term, on Tuesdays 9:00 am)
10% problem sets (weekly, due Fridays by 11:59 pm)
25% lab reports (due Wednesdays 8:00 am, 4x in term + 1x final report)
25% exam (in December, focusing on last module of the course)

Late policy: Late penalty is 3%/day for 5 days; no credit afterwards.

Participation expectations and requirements: It is expected that you attend one Q&A and one tutorial per week, however not required.

When working together is cheating (and when it's not)**:**

Tests must be individual work. No web searching, no communication other than with your TAs to ask for clarification on test questions.
Labs can be discussed, but *all material in your lab report must be your own.* For instance, you may not copy text from Wikipedia or any other web site, and you may not use other people's data.
Problem sets must be completed alone, but you're welcome to discuss questions with classmates (on Piazza, for instance). Just don't give people the answers, because then the purpose of the homework is lost -- problem sets are learning exercises, to get your brain "in shape" for the next steps in the course.

Please read Academic Integrity at UofT and ask your instructor or TA if you find any of the distinctions made here confusing.

Notice of video recording and sharing (download permissible; re-use prohibited)
"This course, including your participation, may be recorded on video and, if so, will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. For questions about the recording and use of videos in which you appear, please contact your instructor."

On Inclusivity: *The University of Toronto commits to all students, faculty and staff that you can learn, work and create in a welcoming, respectful and inclusive environment. In this class, we embrace the broadest range of people and encourage their diverse perspectives. This team*

environment is how we will innovate and improve our collective academic success. You can read the evidence for this approach here.

We expect each of us to take responsibility for the impact that our language, actions and interactions have on others. Engineering denounces discrimination, harassment and unwelcoming behaviour in all its forms. You have rights under the Ontario Human Rights Code. If you experience or witness any form of harassment or discrimination, including but not limited to, acts of racism, sexism, Islamophobia, anti-Semitism, homophobia, transphobia, ableism and ageism, please tell someone so we can intervene. Engineering takes these reports extremely seriously. You can talk to anyone you feel comfortable approaching, including your professor or TA, an academic advisor, our Assistant Dean, Diversity, Inclusion and Professionalism, the Engineering Equity Diversity & Inclusion Action Group, any staff member or a U of T Equity Office.

You are not alone. Follow this link to find a list of clubs and groups that support people who identify in many diverse ways. Working together, we can all achieve our full potential.

On Accommodations: *The University of Toronto supports accommodations for students with diverse learning needs, which may be associated with mental health conditions, learning disabilities, autism spectrum, ADHD, mobility impairments, functional/fine motor impairments, concussion or head injury, blindness and low vision, chronic health conditions, addictions, deafness and hearing loss, communication disorders and/or temporary disabilities, such as fractures and severe sprains, or recovery from an operation. If you have a learning need requiring an accommodation the University of Toronto recommends that students register as soon as possible with Accessibility Services here, phone 416-978-8060, or email accessibility.services@utoronto.ca.*

On Mental Health: *As a university student, you may experience a range of health and/or mental health challenges that could result in significant barriers to achieving your personal and academic goals. Please note, the University of Toronto and the Faculty of Applied Science & Engineering offer a wide range of free and confidential services that could assist you during these times.*

As a U of T Engineering student, you have an Academic Advisor (undergraduate students) or a Graduate Administrator (graduate students) who can support you by advising on personal matters that impact your academics. Other resources that you may find helpful are listed on the U of T Engineering Mental Health & Wellness webpage, and a small selection are also included here:

- *Accessibility Services & the On-Location Advisor*
- *Graduate Engineering Council of Students' Mental Wellness Commission*
- *Health & Wellness and the On-Location Health & Wellness Engineering Counsellor*
- *Inclusion & Transition Advisor*
- *U of T Engineering Learning Strategist and Academic Success*
- *My Student Support Program (MySSP)*
- *Registrar's Office*
- *SKULE Mental Wellness*
- *Scholarships & Financial Aid Office & Advisor*

If you find yourself feeling distressed and in need of more immediate support resources, consider reaching out to the counsellors at My Student Support Program (MySSP) or visiting the Feeling Distressed webpage.

On absences for personal reasons: *during the COVID-19 pandemic, the University is temporarily suspending the need for a doctor's note or medical certificate for absences from academic participation; students should use the Absence Declaration tool on ACORN to declare an absence if they require consideration for missed academic work; students are responsible for contacting instructors to request the academic consideration they are seeking; students should record each day of their absence as soon as it begins, up until the day before they return to classes or other academic activities.*

Use of Turnitin.com: "*Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.*"

On Academic integrity and offenses:
Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:
In papers and assignments:

1. *Using someone else's ideas or words without appropriate acknowledgement;*
2. *Submitting your own work in more than one course without the permission of the instructor;*
3. *Making up sources or facts;*
4. *Obtaining or providing unauthorized assistance on any assignment.*

On tests and exams:

1. *Using or possessing unauthorized aids;*
2. *Looking at someone else's answers during an exam or test;*
3. *Misrepresenting your identity; and*
4. *When you knew or ought to have known you were doing it.*

In academic work:

1. *Falsifying institutional documents or grades;*
2. *Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes; and*
3. *When you knew or ought to have known you were doing so.*

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If students have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, they are expected to seek out additional information on academic integrity from their instructors or from other institutional resources -- see Academic Integrity at UofT.

Land acknowledgement: *We wish to acknowledge this land on which the University of Toronto operates. For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and most recently, the Mississaugas of the Credit River. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.*

Key dates and deadlines:
10 Sept - First class Q&A meeting, 5:10pm
23 Sept - Lab Report 1: Wed 8:00am
29 Sept - Testlet 1 (Tue 9:00 am) covering Module 1
12 Oct - Canadian Thanksgiving, no lectures or tutorials
20 Oct - Testlet 2 (Tue 9:00 am) covering Module 2
14 Oct - Lab Report 2: Wed 8:00am
28 Oct - Lab Report 3: Wed 8:00am

3 Nov - Testlet 3 (Tue 9:00 am) covering Module 3
9-13 Nov - Fall break, no lectures
18 Nov - Lab Report 4: Wed 8:00am
1 Dec - Testlet 4 (Tue 9:00 am) covering Module 4
9 Dec - Final Lab Report: Wed 8:00am
9 Dec - Classes end
Exam (time & date tba) covering Module 5