

# PHY180 “Elements of Physics 1”

## Syllabus: Fall 2022

[Most recent update: September 6, 2022]

### Topics

This course will give an introduction to mechanical systems in physics. While many of the concepts overlap with those taught in final year high school physics courses, this course will use Calculus to describe the motion of objects under the influence of forces. This will allow us to treat more complicated systems than can be treated with simple applications of  $F = ma$ , including rotating objects and situations where dissipative forces are present.

### Textbook

The textbook is **Principles and Practice of Physics** by Eric Mazur. An online copy will be available to you after you enroll in the "MyLab/Mastering" tab in Quercus.

### Correspondence

We have setup a Piazza page for class discussion and Q&A. You can find a link to it [here](#). I will monitor the discussion here, along with Professor Wilson (the practicals coordinator). We will also assign TA hours to moderate the discussions and answer questions (probably you will find different TAs in charge on different weeks). Answers/discussion with your peers will be the first level of 'help' you can expect here, the assigned TA will provide the next level of help/feedback and Dr. Wilson and I will chime in "if all else fails". Please use this discussion board for questions about the physics of the course, but also about the logistics. General questions about course material that are sent to our email will not be answered.

### Grading Scheme

The grades for this course will be compiled as follows:

Problem Sets:	10%
Term test(s):	30%
Practicals/Labs:	25%
Final Exam:	35%

### Problem Sets:

**Due Date:** Problem sets will be posted on the course webpage in the “Problem Sets” column when they are posted and activated in MyLabs/My Mastering portal on Quercus. Due dates and times will be explicitly listed on the problem set.

## Bonus Point for Over 65% Course Evaluation Response Rate

The University of Toronto is committed to ensuring the quality of its academic programs, its teaching, and the learning experiences of its students. An essential component of our commitment to teaching excellence is the regular evaluation of courses by students. For a two-week period at the end of the semester you will be allowed to follow a link that is sent to you by U of T and evaluate this course. It will only take 10 or 15 minutes to answer the questions and enter your typed thoughts about the course. Your answers and thoughts are anonymous, but are very important to me. I promise you that when the results become available to me, I will read every comment and digest the responses to see if it can help me improve the course or my teaching in the future.

During the evaluation period, I will monitor the response rate and advertise it during lectures. If, by the end of the course evaluation period, at least 65% of the students enrolled in this course complete the course evaluations, then every student in the course will have 1% added to their final course mark. If fewer than 65% of students complete the course evaluations, then no bonus point will be added for any student.

## Academic Integrity

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves. Familiarize yourself with the University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>). It is the rule book for academic behaviour at the U of T, and you are expected to know the rules.

**Problem Sets:** The point of you working on the Problem Sets is to prepare yourself for the tests and exam. When you are stuck and find you cannot progress with something, it makes sense to seek out a friend in the class to see if they have any helpful hints. But the work you submit in the end should be *your own* work, and you should understand everything you submit and be prepared to explain why you submitted it.

**Tests and Exam:** Midterm tests and the final exam must be done individually, involving no communication at all with your peers. It is strongly advised not to engage in any behaviour that might be construed by the invigilators for the tests/exam as an attempt to obtain information from another candidate or from another test/exam paper.

**Lab Assignments:** Your lab reports must be done individually. You can collaborate while building and designing, but you must take your own data. You can collaborate on how to analyze data, but your graphs and analysis must be your own. You can consult written resources (including internet resources) but you must cite and reference any material that influence your report. You cannot cut-and-paste from any source without using quotation marks, citations and references appropriately. **Normally, students will be required to submit their course essays to the University's plagiarism detection tool 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 tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).**

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the Code. The consequences for academic misconduct can be severe, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact me. If you are experiencing personal challenges that are having an impact on your academic work, please speak to me or seek the advice of your college registrar.

## Accommodations

If you have a learning need requiring an accommodation the University of Toronto recommends that students immediately register at Accessibility Services at <http://www.studentlife.utoronto.ca/as>.

Location: 4<sup>th</sup> floor of 455 Spadina Avenue, Suite 400

Voice: 416-978-8060

Fax: 416-978-5729

Email: [accessibility.services@utoronto.ca](mailto:accessibility.services@utoronto.ca)

The University of Toronto supports accommodations of students with special learning needs, which may be associated with learning disabilities, mobility impairments, functional/fine motor disabilities, acquired brain injuries, blindness and low vision, chronic health conditions, addictions, deafness and hearing loss, psychiatric disabilities, communication disorders and/or temporary disabilities, such as fractures and severe sprains, recovery from an operation, serious infections or pregnancy complications.

As the instructor of this course, you are also invited to communicate with me at any time about your learning needs. Confidentiality of learning needs is respectfully and strictly maintained.

## Equity, Diversity and Excellence

[This is from <http://www.hrandequity.utoronto.ca/about-hr-equity/diversity.htm> , but I include it here because I believe it to be true, and important.]

At the University of Toronto, we strive to be an equitable and inclusive community, rich with diversity, protecting the human rights of all persons, and based upon understanding and mutual respect for the dignity and worth of every person. We seek to ensure to the greatest extent possible that all students enjoy the opportunity to participate as they see fit in the full range of activities that the University offers, and to achieve their full potential as members of the University community.

Our support for equity is grounded in an institution-wide commitment to achieving a working, teaching, and learning environment that is free of discrimination and harassment as defined in the Ontario Human Rights Code. In striving to become an equitable community, we will also work to eliminate, reduce or mitigate the adverse effects of any barriers to full participation in University life that we find, including physical, environmental, attitudinal, communication or technological.

Our teaching, scholarship and other activities take place in the context of a highly diverse society. Reflecting this diversity in our own community is uniquely valuable to the University as it contributes to the diversification of ideas and perspectives and thereby enriches our scholarship, teaching and other activities. We will proactively seek to increase diversity among our community members, and it is our aim to have a student body and teaching and administrative staffs that mirror the diversity of the pool of potential qualified applicants for those positions.

We believe that excellence flourishes in an environment that embraces the broadest range of people, that helps them to achieve their full potential, that facilitates the free expression of their diverse perspectives through respectful discourse, and in which high standards are maintained for students and staff alike. An equitable and inclusive learning environment creates the conditions for our student body to maximize their creativity and their contributions, thereby supporting excellence in all dimensions of the institution.