Optics, Electricity & Magnetism

1 Course details

Lectures:
MWF 9:30AM–10:20AM SWH10081
MWF 11:30AM–12:20PM B9201

Tutorials: Compulsory. See `go.sfu` for your section time and location. (First week does not count)

2 Instructors

Lecturer: Dr. Hoi-Kwan (Kero) Lau
Office: SCK9692
Office hours: Mo, We 2:30PM–330PM (other time possible upon appointment)
email: kero_lau@sfu.ca

3 Teaching assistants

TA	Guillermo Quspe Pena	Atakan Azakli
email	gfq@sfu.ca	aaa327@sfu.ca
Tutorial sessions	D104, D106, D107, D108, D109	D102, D103, D110, D111
Office hours	Tuesday & Thursday 430–530pm	Monday 230–530pm

All TA office hours will be in the room P9416.

Please prioritize contacting the TA of your own tutorial sessions.

TA can answer physics questions via email. However, it will be much more efficient to discuss in person, so please prioritize coming to office hours.

4 Course description

A general calculus-based introduction to electricity, magnetism and optics. Topics include electricity, magnetism, simple circuits, optics and topics from applied physics.

Pre-requisite: PHYS 120 or 125 or 140 (with a minimum grade of C-), or PHYS 101 (with a minimum grade of B).
Co-requisite: MATH 152 or 155 must precede or be taken concurrently.
Recommended Co-requisite: PHYS 133

5 Course materials

Required: Online access to Achieve For Physics, including e-book, *Physics For Scientists and Engineers (Tipler & Mosa) 6^{th} ed.* and 1-term access to digital iClicker for this course.

6 Grades

Achieve Pre-lectures and Bridge assignments	10%
In-class iClicker questions	10%
Tutorial	10%
Achieve online homework	10%
Written assignments	10%
Midterm (Th 4 June 2026, 6:45PM–8:45PM (tentative))	20%
Final Exam (TBD)	30%
Total:	**100%**

Apart from online homework, everything in the first week does not count.

7 Course Components

7.1 Achieve Online Learning System

We will be using Achieve online learning system for introducing new concepts before the lectures and for weekly online assignments. The Achieve package purchased through the SFU bookstore provides access to the online learning site for the course including the Tipler e-book as well as the iClicker Cloud app for mobile devices or laptop. The Tipler textbook is a good resource for extra practice problems.

- **Purchasing**: You need to purchase the Achieve activation code through the bookstore. If you are uncertain of taking the course, you can register for Achieve for a limited free trial period (two weeks), at which point you will need to buy the course access from the bookstore. The iClicker also has a two week free trial period.
- **Registering in Achieve**: Log in to the Physics 121 Achieve course site at `https://achieve.macmillanlearning.com/` to register and get started. The Achieve course ID is **ve7xg3**. For more details on joining the Achieve course site, see the instructions on the Canvas course site or Lecture 1 notes.

You need to complete the Pre-lectures and Bridge Assignments before each lecture by 8 AM.

7.2 iClickers

We will be using the iClicker response system in lectures during the semester to help us understand where the class is having difficulties in real time. Throughout the lectures there will be questions on various concepts and demonstrations presented, to which you will respond through the iClicker app installed on your own mobile device or laptop.

iClicker grading: Grading is low-stakes since iClicker questions are to help with your understanding; they are not a test. Grading of the iClicker questions involves 1 pt for answering and 1 pt for the correct answer; but if you were to come to every class and answered every question incorrectly, the grading scheme is such that you would still receive full iClicker credit for the course!
iClicker registration: There are two steps:

1. **Get the app & Join the course**: Please go to `https://www.iclicker.com/students/` to download the iClicker app for your mobile device or to log into the web app for your laptop. Access to

iClicker for the course is included in the required course package. After signing in, join our course via `https://join.iclicker.com/ONDD`

2. **Link to Achieve course**: Login to Achieve and click the yellow banner to connect your iClicker (see Achieve information posted in Canvas or Lecture 1 notes for more details). You need to do this to get credit for iClicker responses.

7.3 Tutorials

The tutorials will be led by our course TAs. The purpose of the tutorials is to provide an opportunity to work on your problem solving skills and to apply the concepts learned in class in a small class setting. The tutorials will involve assigned work sheets, which you will complete in small groups during the tutorial sessions. You can get a maximum 5 marks in each tutorial session: 2 marks for attendance, 2 marks for active participation, and 1 mark for the answer you produce. You must attend only the tutorial section in which you are registered, and you cannot switch the tutorial session. An excused absence from a tutorial requires advanced written notification and a verified* excuse. There are no tutorial make-ups.

Because May 18 Monday is a holiday, all tutorials on that day will be exempted. All other tutorials in that week still count.

7.4 Homework

The course homework will include both topically Achieve online assignments and 3 written assignments. Both assignments will be due at 11:59 PM on the date stated on the course schedule. The written assignments will be assigned via the Crowdmark online homework system, where you will upload your scanned/photo'd solutions.

Homework deadline policies: No late written assignments will be accepted. For the online homework, 10% credit per day will be deducted for late submission.

Some advice: The homework assignments are a critical aspect of your learning process and your preparation for the exams. Copying homework solutions from online sources or using AI is not advised because the best way to learn physics is to actually do the physics problems yourself. Discussing the homework assignments in groups is encouraged, but written homework solutions that appear to be copied from each other will not be given credit.

7.5 Exams

Mid-term exam will be held on **June 4 (Thursday), from 645pm to 845pm, in C9001**. Each student is allowed to bring a single page of formula sheet, which has to be single-sided, hand-written, and about A4/Letter size.

Absence from any exam requires advance written notification. If you miss the midterm exam with a verified* excuse, then the exam points will be moved to the final exam, which will then be worth 50%. Note that this is generally not a good idea. There will be no make-up midterm exams. You cannot miss both the midterm and the final exam and pass the course. There is no makeup if you miss the midterm.

The midterm grade will be halved if your final exam grade is better, in which case your final exam will be worth 40% and midterm will be worth 10%.

Students can use scientific calculator in the exams, but it must be non-programmable (Sharp EL-510RN, EL-531 or similar available at the SFU bookstore or office supply stores. Also permitted are the Aurex SC-6108, 6136, or 6145 calculators.)

It is your choice of using pen or pencil in exams. After they are graded, you will be able to check over the grading of your exam in Crowdmark.

Plagiarism/cheating: Please don't even consider it. (Code of academic honesty: `http://www.sfu.ca/policies/gazette/student.html`).

8 Canvas

Because Canvas is suspended right now, course material and announcement will be delivered through emails. Please stay tuned to the emails sent from the instructor and TAs.

9 Lecture Schedule

A projected schedule is posted on Canvas. The classes may fall behind a little, but the exam days will not change. Please note the exam dates now.

10 Concessions

Academic concessions can be granted when unexpected situations or circumstances prevent students from participating in course-related activities, which could include missing a class, or completing graded work or exams. Situations or circumstances that may call for an academic concession include illness, accident, family situation, and similar unanticipated changes in personal responsibilities that create a conflict, or warrant particular compassion. Should you encounter such situations, please contact the instructor ASAP. More details can be found in :`https://www.sfu.ca/students/academic-success/academic-concessions.html`

***Verified excuses**

Verified excuses do not include another class, employment or travel for vacation.

Medical circumstances: In medical circumstances, an official SFU Certificate of Illness must be submitted for medical excuses: `https://www.sfu.ca/content/dam/sfu/students/pdf/certificate-of-illness.pdf`.

Sports team travel: Accommodations can be made for students who are away due to travel with an official SFU sports team. Please have your coach contact us.

All other verified excuses require documentation of some kind. If you are unsure, please contact the instructor.