

**Physics 4211 (Winter 2022):**  
**Electromagnetics**

**Instructor:** Dr. Mark Gallagher  
**Office:** CB 4031 (Ext: 8226)  
**Lab:** CB 2015 (Ext. 8782)  
**Email:** [mark.gallagher@lakeheadu.ca](mailto:mark.gallagher@lakeheadu.ca)  
**Lectures:** Tues. and Thurs. 2:30PM to 4:00PM, in RB3023.  
**Office Hours:** Tues. and Thurs. 11:00AM to 12:00PM.

---

**Course Site:** access through “*myCourseLink*” using university “*myEmail*” username and password.

**Textbook:** *Introduction to Electrodynamics, 4<sup>th</sup> Edition*, by Griffiths.

**Marking Scheme:**

Assignments (approx. biweekly) .....20%  
Midterm I (Tues. Feb. 8th) .....20%  
Midterm II (Thurs. Mar. 17th) .....20%  
Final Exam .....40%

---

**Topics:**

	<b><u>Griffiths</u></b>
Review of Electrostatics .....	Chapter 2
Laplace Equation, Method of Images, Multipole Expansion .....	Chapter 3
Electric Fields in Matter.....	Chapter 4
Magnetostatics .....	Chapter 5
Magnetic Fields in Matter .....	Chapter 6
Electrodynamics.....	Chapter 7
Potentials and Fields .....	Chapter 10
Electrodynamics and Relativity .....	Chapter 12

---

**Lectures:**

The intent is to deliver the lectures *in-person* at the times and place indicated above.

As directed by the University the first two weeks (and potentially longer) of lectures will be delivered online during the allocated lecture times (T&Th 2:30-3:45 PM Eastern). Lectures will be delivered using the “Virtual Classroom” platform which is an application embedded within *D2L* and can be found in the pull down menu under “Other Tools”.

The content of each lecture (pdf) will be made available following each lecture. For those students unable to attend the lectures synchronously, they will be recorded and available on the course site\*.

---

**Problem Sets (20%):**

- a) Assignments will be posted weekly on the *D2L* course site.
- b) Assignments must be submitted in a format compatible with the built-in *D2L* evaluation and feedback tool (single pdf file preferred).

**Term Tests (20% each):**

At this stage the intent is for the two term tests to be delivered in person during class time on the dates indicated.

If the in person tests not possible, they will be taken during class time on the dates indicated, using the built-in D2L quiz tool. Further details regarding each test will be posted later in the term (at least one week prior to each test).

**Final Examination (40%):**

The Final exam will be cumulative (will contain material from the entire course). That said, most of the exam will focus on material covered since the second term test. Further details on the final exam will be posted later in the term.

---

**Accommodations:**

Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please visit: <http://studentaccessibility.lakeheadu.ca>

**Academic Integrity**

The principle of Academic Integrity is a core principle in university study. A breach of Academic Integrity is a serious offence. Students should view the Student Code of Conduct – Academic Integrity – for a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

**\*Recording of Lectures:**

In the context of remote instruction and participation, video and audio recordings of class activities will be made to ensure students' and instructors' easy and comprehensive access to those activities. These recordings are confidential and are intended only for the use of the course students and instructors. They may otherwise not be used or disclosed. During recording, to protect others' privacy, each student should ensure that no one else is present in the location where they are being recorded without that non-student's consent. The recordings are made under the authority of sections 3 and 14 of The Lakehead University Act, 1965.

Questions about the collection of the images and sounds in the recordings may be directed to *Professor Mark Gallagher (Chair), Department of Physics, 955 Oliver Road, Thunder Bay, Ontario, Canada P7B 5E1, 807-343-8461.*