2020A - Electricity and Magnetism (Fall 2019)

Course instructor: Dr. Sean Tulin

Outline: We will cover introductory topics in electromagnetism, including: electrostatics, Coulomb's law, Gauss's law, electric fields and potentials, conductors, electric currents, moving charges, magnetostatics, electromagnetic induction, and Maxwell's equations. We will introduce concepts from vector calculus and special relativity that are essential for a deep understanding of this topic.

Course text: *Electricity and Magnetism* by Edward Purcell and David Morin. This is a classic book written by a Nobel Laureate (Purcell). We will be following the text closely.

Grading and tests: There will be weekly homework assignments, quizzes, two midterms, and a final exam. Your final grade will be based as follows:

- Homework (15%): There will be ten assignments throughout the term. Your homework grade will be the average of all of them.
- Quizzes (5%): There will be short multiple-choice quizzes taken online through Moodle.
- Midterms: Each midterm (two in total) counts 20%. Scheduled for **Wed Oct 2nd** and **Wed Nov 6th** at **11:30 am - 1:20 pm**.
- Final exam: 40%. Date, time, and location to be determined.

Homework policy: Homework problems are the most essential part of this class. Here are the rules:

- Assignments will be posted on Mondays and will be due on the following **Monday before 4pm**. You may turn in your assignments during class or at my office. If I am not present in my office, slip it under my door. No emailed copies are accepted.
- Discussion with peers is encouraged. However, all homework you turn in will be entirely your own independent work. This means that you must not be looking at someone else's solutions while you are writing your own.
- You may not use or look at homework solutions from previous years. Using such material is considered a breach of academic honesty.
- Extensions: none will be given unless there is an emergency or other extreme circumstance. Late homework must be turned in during working hours and will be penalized 10% per 24 hours (this includes weekends too).
- Homework solutions will be made available during class. No electronic copies of solutions will be provided.

Quiz policy: Each week, there will be typically three online quizzes to be completed.

- The closing date for each quiz will be MWF 11am. Each quiz will open 48 hours in advance.
- You will have three attempts for each quiz and your highest mark will count as your grade.

- Each time you attempt the quiz, you have 1 hour to do so.
- You must take the quiz by yourself.
- The quizzes are open-book and open-note. You can use any course materials you want.

Missed midterm policy: If you miss a midterm, you must have a valid excuse and you must contact the course instructor within 24 hours of the exam time to schedule a makeup. If you do not, you will receive zero credit.

Email policy: I try to respond to email questions as soon as I can. However, please obey the following guidelines:

- Please post all physics-related questions on the piazza course page. (You can post anonomously if you wish.) If you are confused, chances are that others are too.
- Do **not** email me to request your grade on any assignment or in the course as a whole.
- Feel free to email me if I forget to upload any course materials in a timely manner.

Other information:

- Instructor email: stulin@yorku.ca
- Instructor office: Petrie 217
- Office hours: Monday 11:30am-12:20pm.
- Course website: http://www.yorku.ca/stulin/2020