

Physics 4351b: Electromagnetic Theory II

Winter Term, 2015 (Version 1.2, January 5, 2015)

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Office Hours: These will be set via an informal poll

Time-Location: The class is held every Monday, Wednesday, and Friday from 11:30am-12:30pm in PAB Room 117.

Text: *Introduction to Electrodynamics, Fourth Edition*, by David J. Griffiths. This is the same text as used in Physics 3300A (E&M I). I will follow the text very closely.

Prerequisite: Physics 3300A. Success also requires a good command of vector calculus.

Antirequisite: Applied Mathematics 4351.

Content: This course follows directly on the content of E&MI (Physics 3300), covering Chapters 8 through 12 of Griffiths. Topics include electromagnetic waves, potentials and fields, electromagnetic radiation, and relativistic electrodynamics.

Evaluation: There will be 3 assignments worth 33% of your final mark (or 11% each), two midterm tests worth 30% of your final mark (or 15% each), an “early-feedback” test worth 2% of your final mark, and a three-hour final exam during the April Exam Period worth 35% of your mark.

- The “early-feedback” test will be held in-class on Monday, January 19th. This 30 minute test will cover background material and the course the up to that point, with an emphasis on mathematical skills. The point of this test, worth only 2% of your final mark, is to provide quick feedback on your progress.
- The midterms will be held in-class and the first midterm will be on Friday, February 6th. The second midterm is tentatively scheduled for Friday, March 13th. The final exam is scheduled by the University.
- The second midterm will test mainly the material covered since the first midterm.
- The final exam is cumulative and will test the entire course.
- A formula sheet will be provided for each test. This will include the inside front and back covers of the text (Vector derivatives; Fundamental theorems; Basic equations of electrodynamics; Fundamental constants; Spherical and cylindrical coordinates). No other notes or aids will be allowed during the test.
- A Sharp EL-5xx series calculator, or other calculator without text capacity, is permitted during the tests. No other electronic devices, except a watch, are permitted.

Passing Grade: To obtain a passing grade in this course you must satisfy **two criteria**:

1. Obtain an average of at least a 50% over all course components.
2. Obtain an average of at least 50% over the two term tests and the final exam. Note that the “quick-feedback” test is not included in this calculation.

Course Policies:

- **Missed Assignments:** Late assignments (after 4 pm on the day they are due) will be penalized 10% per day for up to four days: assignments will not be accepted more than four days past the due date.
- **Missed Midterm test:** Documentation must be provided to the academic counselors in your faculty in order for you to receive permission to write a make-up.
- **Missed Final Exam:** Documentation must be provided to the academic counselors in your faculty in order for you to receive permission to write a make-up (usually scheduled for May 1). If you miss the make-up, documentation must be again provided, and you will write the exam at the next sitting of this courses final exam (typically one year later).
- **Academic misconduct:** Scholarly offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, in the following document:

http://www.uwo.ca/univsec/pdf/academic_policies/exam/courseoutlines.pdf

- **Cheating:** University policy states that cheating is a scholastic offence which can result in an academic penalty, including expulsion from the program. If you are caught cheating, there will be no second warning. Cheating also includes having available any electronic devices other than a watch and an approved calculator at tests and exams. You may not have a cell phone accessible during tests or exams, even to use it as a calculator or watch.
- **Plagiarism:** Students must write their essays and assignments in their own words. Whenever students take an idea or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing (such as footnotes or citations). Plagiarism is a major academic offence.

The most common form of plagiarism in a course such as Physics 4351 is for students to copy solutions from the Instructors Solutions Manual for the Griffiths text. While this form of plagiarism may be difficult to officially prove, you should be aware that it is quite easy for me to detect, both in individual assignments and in a student’s incommensurate performance on the assignments versus the tests.

My experience is that attempting to do the course assignments yourself has a net positive effect on your mark, even if you lose marks on the assignments. This follows from the weighting of the course components in which 67% of the marks come from tests and exams in which you will not have access to solutions.

Note that working on problems in a group and discussing solution approaches is not a form of plagiarism. However each student must submit solutions in his or her own words. Identical assignments will be treated as a case of plagiarism.

- **Student Support:** Students who are in emotional or mental distress should refer to Mental HealthWestern, <http://www.uwo.ca/uwocom/mentalhealth/>, for a complete list of options about how to obtain help.
- **Missing course requirements due to illness:**
 - If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately.
 - A student requiring academic accommodation due to illness should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here: https://studentservices.uwo.ca/secure/medical_document.pdf
- **Religious holidays:**
 - When scheduling unavoidably conflicts with religious holidays which a) require an absence from the University or b) prohibit or require certain activities (i.e., activities that would make it impossible for the student to satisfy the academic requirements scheduled on the day(s) involved), no student will be penalized for absence because of religious reasons, and alternative means will be sought for satisfying the academic requirements involved. If a suitable arrangement cannot be worked out between the student and instructor involved, they should consult the appropriate department chair and, if necessary, the student's Dean.
 - It is the responsibility of such students to inform themselves concerning the work done in classes from which they are absent and to take appropriate action.
 - A student who, for either of the situations outlined in paragraph one above (a or b), is unable to write examinations and term tests on a Sabbath or Holy Day in a particular term shall give notice of this fact in writing to his or her Dean as early as possible, but not later than November 15 for mid- year examinations and March 1 for final examinations, i.e., approximately two weeks after the posting of the mid-year and final examination schedule respectively. In the case of mid-term tests, such notification is to be given in writing to the instructor within 48 hours of the announcement of the date of the mid-term test. If a Special Examination is offered as an alternative means to satisfy the academic requirements, the instructor(s) in the case of mid-term tests and the dean in the case of mid-year and Spring final examinations will arrange for special examination(s) to be written at another time. In the case of midyear and Spring final examinations, the accommodation must occur no later than one month after the

end of the examination period involved. It is mandatory that students seeking accommodations under this policy give notification before the deadlines and that the Faculty accommodate these requests.

- For purposes of this policy the University has approved a list of dates which are recognized religious holidays which require members of those religions to be absent from the University; this list is updated annually and is available at Departmental, Deans' and Faculty advising offices.
- **Accessibility:** Please contact me if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x82147 for any specific question regarding an accommodation.