

PHYSICS 2B06: COURSE OUTLINE 2012-2013

ELECTRICITY AND MAGNETISM

Instructor: Dr. Christine Wilson
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Office Hours: TBD

Lectures: BSB/108 Tuesday, Thursday, Friday: 8:30 – 9:20

Laboratory: BSB-B156 Monday: L01 & L02: 14:30 - 17:20
Tuesday: L03 & L04: 14:30 - 17:20
(every other week)

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TEXTBOOK: *Physics for Scientists and Engineers with Modern Physics (Chapters 25-35)* by R. D. Knight (Pearson, 2nd or 3rd edition). This is the required text of the course this year. This textbook was the required one for Physics 1B03, so I assume that all of you already have a copy of it. All the basic material covered in this course is contained in it. I plan to supplement from other sources in class from time to time.

I-clickers: will be used in this course (can be purchased from the bookstore).

LAB MANUAL: *The lab manual will be posted on the course web site - - as a series of PDF files, which you must download and read.*

The course aims to provide a firm understanding of the basic principles of electricity, magnetism and electrodynamics. Our main emphasis is on electromagnetism as an underlying theory of modern physics. A secondary emphasis is on applied electricity and magnetism and its role in circuits, electronics and laboratory instruments. At the conclusion of the course the student should be comfortable with the use of Maxwell's equations in integral form, and be aware of the differential equation form. The associated

laboratory will demonstrate some of the material covered in the lectures, familiarize the student with electrical measurement techniques and introduce new materials. With additions, the lectures will cover all the chapters involving electricity and magnetism from Knight.

PREREQUISITES: *Physics 1B03*

COREQUISITES: *Math 2A03 (or Math 2XX3) and Math 2C03*

Problem assignments are an integral part of the course. They will be closely correlated with the chapters in the textbook. Notices, solutions to assignments and labs, etc., will be posted on the course web site on Avenue to Learn.

COMPOSITION OF THE FINAL MARK: The final mark is determined by a combination of the assignments, labs, tests and final exams. There will be two mid-term tests and two final exams. A course mark will be calculated with the following weights:

Tests (Oct. 26 & Feb. 15)	7.5% & 7.5%
Term 1 and 2 Final Exams	25% & 25%
Assignments	15.00%
Laboratories	15.00%
Class activities	5.00%

If the laboratory experiments have not all been completed, then the course mark will be F (fail). The instructors reserve the right to substitute an alternate weighting scheme if this will increase the student's final grade. The December exam will test all material in Term I. There will be a make-up exam scheduled during reading week for anyone who misses the December exam. The final examination in April will test all material in Term 2.

CALCULATORS AND EXAMINATIONS: Only the McMaster University standard calculator (Casio fx-991) will be permitted at the mid-year and final examinations.

Academic Integrity

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty") and/or suspension or expulsion from the university.

It is your responsibility to understand what does constitute academic dishonesty . For information on the various kinds of academic dishonesty, please refer to the Academic Integrity Policy, specifically Appendix 3, located at

<http://www.mcmaster.ca/academicintegrity/index.html>

The following examples illustrate only three forms of academic dishonesty:

1. Plagiarism, i.e. the submission of work that is not one's own or for which other credit has been obtained.

2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.
4. Improper use of iclickers

In this course all students are expected to work independently. ***As in all scientific reporting, the work submitted must be the participants'/individual's own work.*** You are encouraged to discuss assignment problems with other students, and to share ideas about general approaches to a solution. However, each student should work out the final details independently, and write up a solution without referring to any written solution or rough work from any other source.

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.