

PHYSICS 203 Intro. Physics III: Electromagnetic Waves, Optics, Modern Physics – Fall 2009

INSTRUCTOR John W. Zwart; office S-224, ext. 6288, zwart@dordt.edu
Home phone 722-4581, not after 10 pm please!
Office hours: Tu 3-4 pm, Th 9:30-10:30 am, Th 3-4 pm or by arrangement
Course information can be found at <http://homepages.dordt.edu/~zwart/>

TEXT Halliday, Resnick, Walker Fundamentals of Physics, 8/e
A laboratory notebook is also required.

COURSE DESCRIPTION Physics 203 is a continuation of Physics 202, which is a prerequisite. Approximately the first half of the course will deal with the conclusion of Electricity and Magnetism including: magnetism, EM oscillations, alternating currents, Maxwell's equations, and EM waves. The second part of the course will deal with: geometrical optics, interference and diffraction, relativity, and topics in modern physics. Pedagogical methodology includes assigned readings, assignments, lectures, demonstrations, videotaped material, laboratories, and in class activities and student presentations. A daily schedule and reading assignments can be found on the reverse of this page.

COURSE OBJECTIVES

- 1) To further an understanding of the physical creation as described by the laws of physics.
- 2) To further develop problem solving methodology.
- 3) To develop understanding of a reformed view of the relationship between faith and science.
- 4) To continue to develop an understanding of measurement techniques and limitations in laboratory experiments.

GRADING SYSTEM	Assignments	20%
	Laboratory	25%
	Class Participation	15%
	Midterm Exams	20%
	Final Exam	20%

Course grades will be assigned as A >93.3%, A- 90.0-93.3%, B+ 86.7-89.9%, B 83.3-86.6%, B- 80.0-83.2% etc.

The weekly problem sets will be due as announced. Late problem sets will receive half credit if handed in before the graded sets are returned and zero credit thereafter, unless previous arrangements have been made. A brief, but complete, statement of each of the problems or questions given must be included as part of the solution. The solutions need to have sufficient detail to enable the grader to understand your method.

Participation score includes being in class, responding to questions, participation in discussions, and three short (5 minute presentations). Please let me know in advance if you need to be gone for a particular reason, and as soon as possible if you are sick.

The exams are scheduled as noted. You may take one 3"x 5" card (no more than 1/16" thick) with whatever handwritten material you desire on it to each exam. The final exam is scheduled for 10:30 am -12:30 pm Wednesday December 16. Three cards can be taken to the final.

The laboratory portion of the class will be taught by Dr. Joseph Kirtland. Material regarding the labs will be provided by him. The lab meets Wednesday from 2-5 pm in S227.

Additional Information

Academic Integrity: Academic integrity is expected in every course and of every student. Plagiarism (using another person's words, graphics, or ideas and presenting them as though they were your own) is one form of academic dishonesty, or cheating. To avoid plagiarism, put others', ideas into your own words and properly reference the source; if needed, you may also use direct quotes and properly reference the source. Another form of dishonesty is double-dipping (resubmitting all or part of a paper or project created for another class or occasion). Students who are academically dishonest will receive an "F" for the assignment or test in question and a letter will be submitted to the Student Life Committee chair. See the Defender for more specific policy information.

Dordt Students' Rights to Assistance or Accommodations Policy: Any student who needs access to accommodations based on the impact of a documented disability should contact the Coordinator of Services for Students with Disabilities (CSSD) in the Academic Skills (ASK) Center. Students should register their needs with the CSSD each semester by contacting Marliss Van Der Zwaag, CSSD, L-168, (712)722-6490, mvdzwaag@dordt.edu.

Physics 203 Tentative Schedule

The schedule below is tentative. The instructor reserves the right to modify it if needed. Unless otherwise indicated, you should read all sections of each chapter of the text before the first day that the topic is discussed in class.

Aug 26, 28, 31	Introduction and Ch 27 Circuits
Sep 2, 4, 7	Ch 28 Magnetism
Sep 9, 11	Ch 29 Magnetic Fields Due to Currents
Sep 14	Ch 1 & 2 of Fischer – topics in faith and science
Sep 16	Ch 30 Induction
Sep 18	student presentations
Sep 21	Ch 30 Induction, continued
Sep 23, 25, 28	Ch 31 Oscillations and AC
Sep 30	Ch 32 Maxwell's Equations
Oct 2	no class – reading break
Oct 5, 7	Ch 32 Maxwell's Equations, continued
Oct 9	Exam #1
Oct 12, 14, 16	Ch 33 EM waves
Oct 19	Ch 3 & 4 of Fischer – topics in faith and science
Oct 21, 23	Ch 34 Images
Oct 26, 28	Ch 35 Interference
Oct 30	student presentations
Nov 2, 4, 6	Ch 36 Diffraction
Nov 9, 11, 13, 16, 18	Ch 37 Relativity
Nov 20	Exam #2
Nov 23	topics in modern physics
Nov 25, 27, 30	no class – Thanksgiving break
Dec 2	topics in modern physics
Dec 4	student presentations
Dec 7	topics in modern physics
Dec 9	Ch 5 Fischer – faith and science & summary
Dec 16	Final Exam 10:30 am – 12:30 pm.