

[Print this page](#)PHYS 212 , Section 001: Electricity and Magnetism

**Faculty Information**

Title	Assoc. Prof. Physics
Instructor	Dr. Ann Schmiedekamp
Office Phone	215-881-7572
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Office Hours	MWF 11-12 pm WF 12-1 pm
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Course Information

Credits	4
Course	212
Section	001
Location	123 W
Times	8-9:50 am MWF
Start Date	August 27, 2007

Required Text

Halliday, Resnick, Walker, Fundamentals of Physics, extended with Modern Physics, 6th, 7th or 8th editions are adequate.

Webassign subscription and access to the internet for the submission of homework are required. Webassign subscriptions may be handled online with a credit card.

Course Description

Physics for science and engineering majors. The course utilizes calculus and covers all topics in electricity and magnetism.

Course Objectives

Understanding the concepts in electricity and magnetism and application of problem solving skills to reinforce conceptual understanding.

Tentative Schedule

Aug. 27 Chapter 21 Electric Charge
Aug. 29 Chapter 21 Coulomb's law
Aug 30 Chapter 21 Electrostatics lab

Sept. 3 Holiday
Sept. 5 Chapter 22 Electric Fields (point charges)

Sept. 7 Chapter 22 Electric fields –charge distributions

Sept. 10 Chapter 22 Electric dipoles
 Sept. 12 Chapter 23 Gauss's Law Flux
 Sept. 14 Chapter 23 Gauss's Law with symmetry

Sept. 17 Chapter 23
 Sept. 19 Chapter 24 Electric Potential
 Sept. 21 Chapter 24 Equipotential Surfaces

Sept. 24 Chapter 24 Electric potential energy of a system of point charges
 Sept. 26 Chapter 24
 Sept. 28 Chapter 25 Capacitance

Oct. 1 Chapter 25 Capacitance in Series/Parallel
 Oct. 3 Chapter 25 Energy stored in E field, dielectrics
 Oct. 5 Exam 1

Oct. 8 Chapter 26 Current and Resistance
 Oct. 10 Chapter 26 Resistivity
 Oct. 12 Chapter 26 Ohm's Law

Oct. 15 Chapter 27 Circuits: Single Loop
 Oct. 17 Chapter 27 Circuits: Multiloop
 Oct. 19 Chapter 27 RC circuits

Oct. 22 Chapter 27
 Oct. 24 Chapter 28 Magnetic Fields: Magnetic Force on a charged particle
 Oct. 26 Chapter 28 Crossed E and B fields

Oct. 29 Chapter 28 Circulating charged particles, synchrotrons, cyclotrons
 Oct. 31 Chapter 28 Torque on a Current Loop; Magnetic dipole moment
 Nov. 2 Chapter 29 Magnetic Fields due to Currents

Nov. 5 Chapter 29 Force between two parallel currents
 Nov. 7 Chapter 29
 Nov. 9 Exam 2

Nov. 12 Chapter 30 Induction and Inductance
 Nov. 14 Chapter 30 Induced E fields
 Nov. 16 Chapter 30 Inductors, RL circuits

Nov. 19-23 Thanksgiving Break

Nov. 26 Chapter 30 Energy stored in a magnetic field
 Nov. 28 Chapter 31 Electromagnetic Oscillations and AC circuits
 Nov. 30 Chapter 31 LC oscillations

Dec. 3 Chapter 31 RLC circuits
 Dec. 5 Chapter 31
 Dec. 7 Chapter 32 Maxwell's equations: Gauss's law for magnetism

Dec. 10 Chapter 32 Displacement current
 Dec. 12 Chapter 32 Ferromagnetism, Paramagnetism, Diamagnetism
 Dec. 14 Chapter 32

Dec. 17, Monday Final Exam 8:30-10:20 am 313 W
 Note new room for final exam!!

Course Prerequisites

Prerequisites: Math 140, Physics 211
Concurrent: Math 141

Grading Policy

Exam 1 - 25%

Exam 2 - 25%

Pop quizzes, classwork, homework assignments, including webassign 25%

There are no makeups for pop quizzes. The equivalent of two pop quizzes will be subtracted from the grade total to accommodate unavoidable absences. Lab assignments turned in late will cost the student one point per day.

Final Exam 25%

Exams will be closed book but important physical constants will be provided. A student is allowed to write both sides of one 3 x 5 inch index card. It is expected that the student will use this card to note important formulas covering the course material. The card will be submitted with the exam but cards used for exams 1 and 2 will be returned with the graded exams.

Scientific calculators are allowed during exams and quizzes but other electronic devices may not be used at any time.

A > 88 C+ = 65-68

A- = 84-87 C = 58-64

B+ = 80-83 D = 52-57

B = 73-79 F < 51

B- = 69-72

Attendance Policy

a) There are no makeups for pop quizzes. The equivalent of two pop quizzes will be subtracted from the grade total to accommodate unavoidable absences.

b) Lab exercises can be made up only upon availability of the equipment or classroom. However, due to crowded scheduling, this may be difficult. Since many class exercises and all quizzes cannot be made up, excessive absences will negatively affect the class grade. A makeup lab period will be held in week 14 of the semester to give students a chance to do a makeup lab to compensate for an absence due to a legitimate reason. Labs and assignments are due on the due date, even if the student is absent. Labs may be emailed if the student is not able to attend.

c) If a student has a serious reason for missing exam 1, exam 2 or the final exam, the professor must be contacted on or before the date of the exam and evidence should be provided to document the legitimacy of a makeup. A make up exam for exams 1 and 2 will be given in week 14 of the semester. The make up exam may be in a different format and could be comprehensive. Immediate notification of the professor on or before the day of the final exam is essential if the student must be absent for a legitimate reason.

Academic Integrity

Academic honesty is expected of all students at Penn State University. Any reasonable proof of academic dishonesty in the completion of an exam, quiz or homework, may result in sanctions against the student, which may include a grade of zero on an exam, quiz or assignment. Please consult the Abington College Academic Integrity Policy for explanation of what is considered a violation.

<http://www.abington.psu.edu/psasite/cs/shared/Registrar/academicintegritypolicy.html>

Examination Policy

See grading policy

Disability Access Statement

Penn State encourages persons with disabilities to participate in its programs and activities. If you anticipate needing any type of accommodation or have a question about disability services, please contact Anne Prior, Room 315 Sutherland, 215-881-7537.

Additional Information

Respect for a proper academic climate during class is expected of all students. Please turn off cell phones before entering the classroom to avoid disruption.

Due to safety regulations, no food or drinks may be consumed in the physics labs.

Open toe shoes are also banned due to safety regulations.

Free peer and professional tutoring and study skill coaching are available at the Learning Center (Room 315 Sutherland, 215-881-7538). Students striving for an "A" and students struggling for a "C" agree that they benefit from tutoring sessions. To find out how the Learning Center can help you, call or visit Mondays through Thursdays from 9:00 to 5:30 p.m. and Fridays from 9:00 to 4:00 p.m.

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