Physics 104: General Physics II

Spring Term 2009
MWF 9:00-9:50
Human Ecology 132

Instructor

Prof. Michael Faux
131 Physical Sciences
(607) 436-3145
fauxmg@oneonta.edu
http://www.oneonta.edu/faculty/fauxmg

Textbook

College Physics
R. A. Serway and C. Vuille
Pearson Prentice Hall, eighth edition, 2009
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ISMN-10: 0-495-38693-6

Course Overview

This course provides an introduction to classical notions of electicity and magnetism, light and optics.

Office Hours

I hold office hours from 11:00am until 12:30pm Mondays, Tuesdays, and Fridays. During these times I'll be in my office, and will be happy to meet with any student. Alternatively, students are encouraged to email or phone me to schedule an appointment. Please leave a voice message if I'm not in the office. I'll make every effort to accommodate you.

Homework

I will assign a set of homework problems approximately once per week. These will include problems from the textbook and also extra problems invented by me. Written solutions will be provided after the due date, and certain problems will be discussed in class. Students are required to understand all of the homework questions.

Attendance

Attendance to lectures is mandatory. I will take attendance occasionally, and spontaneously. If you are unable to attend lecture owing to medical issues or some reasonable and verifiable conflict, then you are obliged to notify me in advance, by email or phone if possible. The final course score includes an attendance contribution computed as that percentage of classes attended when attendance polling is randomly taken. Previously-excused absences will be counted as attendances for this purpose. Forgetfulness and oversleeping are not valid excuses.

Exams

There will be two in-class midterm exams, and one final exam. See below for the respective dates. Each exam will be cumulative, meaning that all material covered up to that point will be tested. Only serious, utterly unavoidable, fully-verifiable excuses will be accepted to explain absence from any of the three examinations. In almost all circumstances, a missed exam will result in an exam grade of zero.

Laboratory

There is a weekly laboratory session associated with this course. Those students enrolled in "section 01" will meet on Thursdays from 8am until 10:50am, and those students enrolled in "section 02" will meet on Thursdays from 2pm until 4:50pm. The laboratory sessions will meet in the Physical Sciences Building, in room 105. The first laboratory meetings will be on Thursday January 22. A separate laboratory syllabus will be distributed prior to the first meeting.

Reading

The class schedule below indicates the chapter of the textbook covered during the lectures. Students should make time each week to carefully read the textbook and take notes while doing so. Proper understanding of the subject will be enhanced considerably by reading the text and thinking critically about what you are reading. This reading should be understood as a bona fide responsibility, and should be undertaken seriously and diligently. Students are highly encouraged to ask questions which should arise from reading the text.

Grading

You will receive a numerical grade for this course, computed using the following scheme:

Attendance	10%
Laboratory	15%
Midterm Exam #1	25%
Midterm Exam #2	25%
Final Exam	25%
Total	100%

The numerical course grade will be converted to a letter grade using a fair and generous grading curve.

Date	Lecture Topic	Reading
Jan 14	Introduction	
16	Electric Charge	Chapter 15
19	Coulomb's Law	
21	The Electric Field	
23	Gauss's Law	
26	Electric Potential	Chapter 16
28	Capacitance	
20	Dielectrics	
Feb 2	Electric Energy	
4	Electric Current	Chapter 17
6	The Battery	
9	Ohm's Law	
11	D.C. Circiuits	
13	REVIEW	
16	MIDTERM EXAM # 1	

Table 1: Provisional schedule for the first third of Physics 104. This may be subject to modification. Up-to-date reading and homework assignments will be provided during the lectures.

Date	Lecture Topic	Reading
Feb 18	Voltage	Chapter 18
20	Resistors	
23	NO CLASS	
25	NO CLASS	
27	NO CLASS	
Mar 2	Capacitors	
4	RC Circuits	
6	Magnetism	Chapter 19
9	Force on a Moving Charge	
11	Magentic Field due to a Wire	
13	Ampere's Law	
16	Electromagnetic Induction	Chapter 20
18	Magnetic Flux	
20	Faraday's Law	
23	Transformers	
25	REVIEW	
27	MIDTERM EXAM # 2	

Table 2: Provisional schedule for the middle third of Physics 104. This may be subject to modification. Up-to-date reading and homework assignments will be provided during the lectures.

Date	Lecture Topic	Reading
Mar 30	Electromagnetic Waves	Chapter 21
Apr 1	Maxwell's Equations	
3	Light	
6	NO CLASS	
8	NO CLASS	
10	NO CLASS	
13	NO CLASS	
15	The Speed of Light	
17	Geometric Optics	Chapter 22
20	Snell's Law	
22	Spherical Mirrors	Chapter 23
29	Thin Lenses	
27	The Wave Nature of Light	Chapter 24
39	Diffraction	
May 1	The Electromagnetic Spectrum	
3	Interferometry	
4	REVIEW	
6	REVIEW	
TBA	FINAL EXAM	

Table 3: Provisional schedule for the final third of Physics 104. This may be subject to modification. Up-to-date reading and homework assignments will be provided during the lectures.