

Physics 212—General Physics II
Spring, 2009
High Point University
Syllabus

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<http://linus.highpoint.edu/~atitus/>

My personal mission is to encourage you to be a life-long, interdisciplinary learner. If you are teachable, motivated, and diligent, you will be successful!

My educational philosophy is that you learn best when you are actively engaged with the subject through activities such as reading (and answering questions about what you read), discussing, experimenting, and solving problems. Lectures are useful for motivation, but for most students merely listening to lectures and copying lecture notes is an ineffective method to learn. It's when you study individually, think deeply about the subject, develop ideas and test them, and subsequently dialogue with classmates and the professor that you learn the most. My role as the professor is to create an environment that promotes active-learning, to assess your learning, and to provide guidance and mentorship along the way.

I expect you to learn the tools of scientific exploration that we will use in this class, including appropriate mathematics such as algebra and trigonometry, laboratory sensors and technology, video analysis, graph analysis, and data analysis.

I reserve the privilege to change this syllabus based on feedback from you and what I determine is best for the course. If the syllabus is changed, you will receive a printed copy of the updated version.

Lecture and Lab: *Lab:* M 2:00 PM–5:00 PM (Section 01) and W 2:00 PM–5:00 PM (Section 02) in Rm. 130 Congdon Hall (i.e. Haworth Hall of Science); *Lecture:* 8:00 AM – 8:50 AM in Rm. 130 Congdon Hall (i.e. Haworth Hall of Science).

Office Hours: T: 1:00 PM – 3:00 PM; TH: 1:00 PM–3:00 PM; F: 2:00 PM–3:00 PM; in Rm. 342 or 130 Congdon Hall.

Course Description: A trigonometry-based study of electricity and magnetism, geometrical and physical optics, relativity, atomic and nuclear physics, and quantum theory. Four hours credit. Three class hours; three laboratory hours. Prerequisite: PHY 211.

Textbook(s): *Introductory Physics: Building Understanding* by Jerold Touger; published by Wiley (ISBN: 978-0-471-94000-5). *You are required to purchase the ebook from WebAssign.* Upon logging into WebAssign, there is a link that says, “Click here to purchase Touger OnLine.” Enter the payment information by the given deadline in order to purchase the textbook. The ebook only costs \$15.00. A hardback version of the textbook is optional. You can purchase it from the bookstore or online. A hardback version is also on reserve at the library.

Required items: a scientific calculator; a computer with internet access; a lab notebook; a TurningPoint ResponseCard RF clicker.

Course Web Site: <http://linus.highpoint.edu/~atitus/courses/phy212/>

Grading Scale (min%): A+ (96), A (92), A– (88), B+ (84), B (80), B– (76), C+ (72), C (68), C– (64), D+ (60), D (56), D– (52), F (<52).

Grade Determination: lab (15%), homework (10%), in-class activities (5%), quizzes (50%; 5 quizzes, 10% each), final exam (20%).

WebAssign: Homework will be delivered, collected, and graded using WebAssign. To get to WebAssign, you should first log in to Blackboard at the address shown below, select the link to PHY 212, and then click on the link to WebAssign in the left panel. (Right-click the link to WebAssign if you want to open it in its own window.)

<http://blackboard.highpoint.edu/>

Typically, there are two to three homework assignments per week that are due each Monday at 7:59 AM.

In-class activities: We will use a classroom polling system (i.e. clickers) during every lecture in order to help you practice applying concepts taught in class. *You are required to purchase a clicker from the bookstore or online, and you are required to bring it to every lecture.* Specifically, we will use the TurningPoint

ResponseCard RF by TurningTechnologies (<http://www.turningtechnologies.com/>). Each lecture will begin with questions based on reading assignments and previous homework assignments. For full credit, you must be present and you must answer questions using the clicker. Your grade will be your total percentage of responses. Correctness will not be counted, but rather you will receive full credit merely for responding to question(s). Worksheets may also be sometimes used as in-class activities and may count toward your grade.

Quizzes: There will be six quizzes. Your lowest quiz score at the end of the semester will be dropped, and the average of your five highest quizzes will be computed and will have a weight of 50% of your overall course grade. Quizzes will be 50 minutes and will be administered on the dates shown in Table 1. A missed quiz for ANY reason will count as a zero. If more than one quiz is missed due to a school activity or a medical condition that requires surgery or hospitalization, then the final exam grade will substitute for the (missed) quiz grade. Absences due to a school activity must be approved by the professor prior to the quiz.

Table 1: Tentative Schedule of Quizzes

Quiz No.	Date	Description
1	Mon, Jan. 26	Ch. 15-16
2	Mon, Feb. 9	Ch. 17-18
3	Mon, Feb. 23	Ch. 19-20
4	Mon, Mar. 23	Ch. 21-23
5	Mon, Apr. 6	Ch. 11-12
6	Mon, Apr. 20	Ch. 24-28

Quizzes will consist of two sections: (1) conceptual and numerical multiple choice questions; (2) problem solving. Content may include topics and skills learned in lab.

Lab: Lab will consist of a pre-lab lecture and simulations, experiments, and/or other types of “hands-on” activities. For each lab, you will record all measurements, observations, and graphs in a lab notebook. You will submit your data and results in a lab report on WebAssign. The lab report is typically due the week after the completion of the experiment. Your lab grade will consist of your grade on the lab report, submitted labwork and/or lab participation, and perhaps a lab practical.

Lab is scheduled for three hours. You are expected to be there for three hours if needed in order to finish the experiment. Do not expect to leave early.

Labs will begin on the week of Monday, Jan. 26, 2009. A tentative schedule of experiments is given in Table 2.

Table 2: Tentative Schedule of Experiments

Lab No.	Section 01	Section 02	Description
1	1/26	1/28	Geometric Optics
2	2/2	2/4	Coulomb’s law
3	2/9	2/11	Electric field
4	2/16	2/18	Measuring current; charging and discharging capacitors
5	2/23	2/25	Ohm’s Law;
6	3/2	3/4	Circuit analysis
7	3/16	3/18	Measuring magnetic field(s); magnetic field due to a long, straight wire; magnetic field due to a coil
8	3/23	3/25	Electromagnetic induction
9	3/30	4/1	Calorimetry
10	4/20	4/22	Atomic absorption and emission of photons (i.e. light spectra)

Final Exam: Friday, 5/8/09, 8:30 AM–11:00 AM. The final exam is comprehensive and will last approximately three hours. It will be given at the time specified on the university’s final exam schedule. *The final*

exam can NOT be taken at any other time for any reason. It will be exclusively multiple choice.

Help: Our class will meet for a review session each Sunday evening before a quiz, 7:00–8:00 PM in Rm 130 HHSC.

Academic Services Center has both individual and group tutoring available for HPU students. Individual tutoring is for those students who need one-on-one assistance with a course and is appointment based. To make an appointment contact Craig Curty, Director of Academic Services Center, by phone (336) 841-9014 or via e-mail ccurty@highpoint.edu. Group tutoring is available for specific courses certain days and times during the week and no appointment is necessary. All tutoring takes place in the lower level of Smith Library. For further information regarding tutoring and updated tutor walk-in schedules, please check the website <http://www.highpoint.edu/academics/asc>.

Expectations: Expect to work hard, to be challenged, to learn, and to work together. Expect to break through any struggles, doubts, and challenges to gain new abilities, accomplish new tasks, and develop analytical reasoning skills.

Accommodations: Students who require classroom accommodations due to a diagnosed disability must submit the appropriate documentation to Mrs. Irene Ingersoll, Assistant Director of the Academic Services Center and Coordinator for Disability Support. Please inform her of your need for accommodations at the beginning of the semester. Accommodations are not retroactive.

Attendance: If you have more than six unexcused absences, you can be withdrawn from the class. *Absences are measured by your lack of response to in-class questions.* I reserve the right to choose whether to withdraw you or not for lack of attendance.

Course Evaluations: All students are expected to complete course evaluations in the week preceding final exams. These evaluations, which are delivered online, are an important part of High Point University's assessment program, so your cooperation in completing them is greatly appreciated. As the end of the semester or academic session draws near, you will receive information from the Office of Institutional Research and Assessment about how to complete the online evaluations. **IMPORTANT NOTE:** All communications from the Office of Institutional Research and Assessment will be sent to your High Point University e-mail account, so please be sure to check and maintain your account regularly.

Schedule: A tentative schedule of lectures is given in Table 3.

Table 3: Tentative Schedule of Lectures

Day No.	Date	Chapter
1	1/14	15
2	1/16	15
3	1/21	16
4	1/23	16
5	1/26	Quiz 1
6	1/28	17
7	1/30	17
8	2/2	17
9	2/4	18
10	2/6	18
11	2/9	Quiz 2
12	2/11	19
13	2/13	19
14	2/16	19
15	2/18	20
16	2/20	20
17	2/23	Quiz 3
18	2/25	21
19	2/27	21
20	3/2	21
21	3/4	22
22	3/6	22
23	3/16	22
24	3/18	23
25	3/20	23
26	3/23	Quiz 4
27	3/25	11
28	3/27	11
29	3/30	12
30	4/1	12
31	4/3	12
32	4/6	Quiz 5
33	4/8	24
34	4/10	24
35	4/15	25
36	4/17	26
37	4/20	Quiz 6
38	4/24	27
39	4/27	27
40	4/29	28