

Syllabus - General Physics B

PHY 2049C, sections 1-6 , Fall 2014

Catalog Description: General Physics B (5). Prerequisite: PHY 2048C or 2048 with a grade of C- or better or consent of instructor. An introduction to electricity, magnetism and optics for physical science majors, designed to be taken as a sequence with General Physics A (PHY 2048C) and Intermediate Modern Physics (PHY 3101). (*Remember this entitles you to a Minor in Physics!*) Calculus is used. PHY 2049C consists of lectures, recitations, and laboratory.

Text Book, Iclicker

You will need a copy of the text: [Essential University Physics](#), Volume 2 by Richard Wolfson, Addison-Wesley publishers. (NOTE: In PHY 2048c we used Volume 1 of Wolfson, but you will need Volume 2 for PHY2049C.) The Laboratory assignments are available for downloading from the LON-CAPA class web page, see the course schedule below.

Students will need to purchase their own "Iclicker" and [register](#) it. The transmitters should be available at the bookstore either separately or bundled with the textbook. If you already own an "Iclicker", you may have to re-register it.

Professors associated with the course:

Faculty	Room	Phone	Office Hours	Email Address
Dr. I. Wiedenhover Lecturer, Course Leader	217 Keen	644-1429	M 1:00-3:00	iwiedenhover@physics.fsu.edu
Dr. S. Hill	310 Keen	644-1647 645-8793	MW 10-11	shill@magnet.fsu.edu
Dr. H.K. Ng	416 Keen	644-4558	MW 9-10	hkng@fsu.edu
Dr. D. Bopege	TBA		W 12:30-2:30	dbopege@fsu.edu

TA's associated with the course:

Name	Office	Email address

Course enrollment:

General Physics includes laboratory! Separately from the PHY2049C, you have to register for one of the PHY2049L sections. The laboratory is an integral part of the course. To pass the class, you must pass the lab. The five (5) credits **PHY 2049C** includes a Tuesday - Thursday lecture, a Monday - Wednesday tutorial section, **and** a laboratory.

Class Meetings A) Lectures: Tuesdays and Thursdays

Classes meet in 101 Richards (UPL) from 11:00 to 12:15 am. These classes involve demonstrations, worked examples, and discussion of the major concepts and techniques used in this course. In addition we will have short “pop quizzes” using the iclicker system. Registers of students attending class will be noted. *Remember the performance versus attendance graph from previous years shown to you the first day of class!* Read the designated text sections before class. All exams except for the final, will be given in these Tuesday or Thursday classes (see schedule below). Solutions to the exams (except the final) will be posted on the web. Discuss any problem, which would cause you to miss an exam, with Dr. Wiedenhöver **prior to the exam**, unless, of course, the problem could not be anticipated.

Class Meetings B) Tutorials: Mondays and Wednesdays

Tutorial or recitation classes meet as scheduled below. These classes are where you will hone your problem solving skills in physics and thus they act as an excellent preparation for the exams as well as help with the homework assignments. Students will be expected to present their solution to homework-problems in class in order to receive participation credit. Homework is completed by inputting answers via the internet using the Learning Online Network with Computer-Assisted Personalized Approach ([LON-CAPA](#)) system. **All LON-CAPA homework is due in by midnight of the assigned day, the computer deadline system allows no exceptions!**

Section	Time: Monday and Wednesday	Instructor	Room
1	08:00-08:50	S. Hill	UPL 112
2	09:05-09:55	S. Hill	UPL 112
3	10:10-11:00	H.K. Ng	UPL 112
4	11:15-12:05	H.K. Ng	UPL 112
5	10:10-11:00	D. Bopege	UPL 114
6	11:15-12:05	D. Bopege	UPL 114

Class Meetings C) Laboratory Classes:

The purpose of the laboratory sessions is to gain hands-on experience with laboratory apparatus, to develop skills in performing experiments, and to learn methods for analyzing scientific data. In order to help you complete the lab assignments efficiently, we have prepared pre-lab exercises within the LON-CAPA homework system, listed as the “PHY2048L” course. This exercise is due on noon of the day your lab is scheduled. The completion of the exercise contributes 20% to your lab-grade.

Each student must complete a lab report following the format prescribed by the lab instructor, before leaving the lab session. Attendance at each lab session is a requirement of the course. If you miss more than two labs you will automatically receive a grade “F” for the course. In addition, if you do not complete a missed lab, you do not get credit for that lab in your laboratory score (see below). Please make sure you do all the labs!

Section	Day	Time (all pm)	Room	Instructor (TA, Faculty)
1	Monday	12:30 – 3:30	114 UPL	D. Bopege
2	Monday	3:45 – 6:45	114 UPL	D. Bopege
3	Tuesday	12:30 – 3:30	114 UPL	I. Wiedenhoever
4	Tuesday	3:45 – 6:45	114 UPL	I. Wiedenhoever
5	Wednesday	12:30 – 3:30	114 UPL	H.K. Ng

6	Wednesday	3:45 – 6:45	114 UPL	H.K. Ng
7	Thursday	12:30 – 3:30	114 UPL	S. Hill
8	Thursday	3:45 – 6:45	114 UPL	S. Hill
9	Wednesday	7:00 – 10:00	114 UPL	

Completion of Course and Grading:

Examinations: During the semester, there will be 6 **mini-exams** (approx. 25 minutes long) and one final exam. The bi-weekly mini-exams, because they account for a large fraction of the final grade, represent a very significant part of the course. Below are a few rules and answers to common questions about these.

- Six mini-exams will be given during the semester.
- All mini-exams will be given at the beginning of the Thursday lecture.
- The material covered will be related to recent or previous LON-CAPA assignments. (Do not expect to see exact copies of LON-CAPA questions.)
- The mini-exams will last approximately 25 minutes and must be handed-in by the required deadline.
- Students arriving late will be required to submit their mini-exam by the same deadline as the rest of the class.
- If you take all six mini-exams, the lowest score will be dropped.
- If you miss a mini-exam, talk to Dr. Wiedenhoever, immediately.
- Each student is responsible for bringing a working calculator.
- Don't try to cheat. The first cheat on an exam results in a grade of 0 for that test, the second results in a "F" for the course. Remember the FSU Honor Code and just think what your mom and dad would say!
All cheating will be reported to the FSU honor council.
- Any grading questions you have must be resolved with the Professor who set the mini-exam **within 2 weeks** of the date your score appears on your LON-CAPA web page.

Course Grade: The course grade will be calculated using the class participation scores, the scores of the lon-capa problem sets, the bi-weekly mini-exams, the laboratory reports and the final examination. These components will be weighted in the following way. Your final grade will be based on your total score in the six areas. We will use the table shown below as our guide for determining grades:

Category	
Best 5 out of 6 Mini-Exams	30%
Final Examination	25%
Laboratory	20%
Homework/lon-capa	15%
Recitation Participation	5%
Iclicker-answers / attendance	5%
Total	100%

Grade	Score	Grade	Score
A	100 – 90	C+	74.9 – 71
A-	89.9 – 87	C	69.9 – 67
B+	86.9 – 83	C-	66.9 – 62
B	82.9 - 79	D	61.9 - 55
B-	78.9 – 75	F	54.9 - 0

Students who do not attempt the final exam will automatically be given a grade “F” for the course. You should keep a record of your point totals on lon-capa, laboratories and exams, in order to verify and check our record keeping.

FSU Academic Honor Policy: The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and... [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://academichonor.fsu.edu/policy/policy.html>.)

University Attendance Policy: Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience illness.

Resources for Students:

We want you all to do well in this course. There are resources available to help you towards this goal. Please take advantage of them.

1. **Classes.** Attend lectures and recitations. You may not realize it at the time but what you learn and retain from these classes may surprise you and serve you well during examinations.
2. **Professor's office hours.** Each of the faculty members instructing this course have scheduled office hours to help students with homework problems and other matters that arise during the course. These times are given at the beginning of this document. Other times may be arranged. Please don't hesitate to call or email us.
3. **Physics Department consultation sessions.** After the first week a graduate student is available to assist you in your LON-Capa homework and keeping up that average score of 20/20 in the mini-exams! These times are given below.

Consultant	Day	Time	Room
TBA			

Free Tutoring from FSU: ACE Learning Studio (<http://ace.fsu.edu/>) in Johnston Ground (WJB) will have tutoring available for PHY2048C and 2048L during Spring semester, 2014. Tutoring is free for all enrolled FSU undergraduate students, and appointments can be made by calling 645-9151, logging on to Blackboard Secure Apps, or stopping by. When possible, group tutoring sessions can be arranged around posted test dates. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

Individual Tutors If you would like to hire a tutor, check with Ms. Melissa Wolff in the Physics Undergraduate Office on the 3rd floor. She can be reached either by e-mail or by calling the following: email : ugrad@physics.fsu.edu Office : 304 Keen Building, Phone : 644-3245. She also has a hardcopy list of physics graduate students who are happy to work (for pay) as tutors in his office.

Americans With Disabilities Act: Students with disabilities needing academic accommodations should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. **This should be done during the first week of class.**

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center
874 Traditions Way 108
Student Services Building
Florida State University
Tallahassee, FL 32306-4167

(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu
<http://www.disabilitycenter.fsu.edu/>

Some Sensible Advice

We want everyone to pass this course. Unfortunately many people find doing physics rather difficult. Below are a few tips to help make your adventures in physics fun.

- This course is no pushover, physics is *based on understanding* not remembering. We will do all we can to help you, but only you know whether you really understand something or not! Test yourself on additional problems. If, after reading additional problems, you have no idea how to solve them, then you have not understood the concepts. *Do not just regurgitate the answers.*
- Physics and math are intimately related. Refresh and apply your math skills to solve the problems.
- In order to prepare for the exams make sure you understand and can do all the homework problems. You are strongly encouraged to do extra problems. Do not just memorize the solutions.
- In answering a question, always ask yourself "Is this answer sensible?" Always check through your solution and don't forget to put the units in!
- Attend all lecture and tutorial classes.
- Use the textbook, you paid good money for it! Try to find time to look over a chapter before and after it is covered in class.
- Use the professors' office hours.
- Find a study partner. *We strongly encourage students to study and learn together.*
- Finally, don't give up or sit for hours trying to do the homework. Come and discuss your solution with us. Often you will be much closer than you think to being able to solve a problem.
- If you are seriously thinking of dropping the course at any point please come and talk to Dr. Wiedenhöver or one of the other Profs first.

Good luck and we hope you enjoy the course!

Daily schedule for the course

Date	Schedule and Assignments	Laboratory
M 25 Aug T 26 Aug W 27 Aug Th 28 Aug	Welcome to course; syllabus handed out Lect 1 Course intro, Discuss Ch. 20, Charges Problem Set #1 due Lect 2 Discuss Ch. 20, Electric Field I	No laboratory classes this week
M 1 Sep T 2 Sep W 3 Sep Th 4 Sep	No Classes. Labor Day Lect 3 Discuss Ch 21, Electric Field, multiple charges; Problem set #2 due Lect 4 Mini-Exam 1 , Discuss Chs. 21, Gauss' Law	No laboratory classes this week
M 8 Sep T 9 Sep W 10 Sep Th 11 Sep	Problem set #3 due Lect 5 Discuss Ch.22, Gauss' Law, Electr. Potential Problem set #4 due Lect 6 Disc. Ch. 22, Electr. Potential	Lab 1: Distribution Functions
M 15 Sep T 16 Sep W 17 Sep Th 18 Sep	Problem set #5 due Lect 7 Discuss Ch. 23, Capacitors Problem set #6 due Lect 8 Mini-Exam 2 , Discuss Ch. 23, Electr. Energy & Cap.	Lab 2: Fields of Force

M 22 Sep T 23 Sep W 24 Sep Th 25 Sep	Problem set #7 due Lect 9 Discuss Ch. 24, DC current; Problem set #8 due Lect 10 Ch. 25, DC circuits	Lab 3: Ohm's Law and Resistor Circuits
M 29 Sep T 30 Sep W 1 Oct Th 2 Oct	Problem set #9 due Lect 11 Ch. 25, DC circuits Problem set #10 due Lect 12, Mini-Exam 3 , Discuss Ch. 26 Mag. Field: Forces	Lab 4: Construction of an Amperemeter and Voltmeter
M 6 Oct T 7 Oct W 8 Oct Th 9 Oct	Problem set #11 due Lect 13 Discuss Ch. 26, Mag. Field: Sources Problem set #12 due Lect 14, Discuss Ch. 26, Mag. Field: Sources	Lab 5: Null Comparator Instruments
M 13 Oct T 14 Oct W 15 Oct Th 16 Oct	Problem set #13 due Lect 15 Discuss Ch. 27, Mag. Induction Problem set #14 due Lect 16, Mini-Exam 4 , Discuss Ch 27, Mag. Induction	Lab 6: The Oscilloscope I
M 20 Oct T 21 Oct W 22 Oct Th 23 Oct	Problem set #15 due Lect 17 Discuss Ch. 27, Mag. Induction Problem set #16 due Lect 18, Discuss Ch. 28, AC Circuits	Lab 7: Currents and Voltages in RC and RL Circuits.
M 27 Oct T 28 Oct W 29 Oct Th 30 Oct	Problem set #17 due Lect 19 Discuss Ch. 28, AC Circuits Problem set #18 due Lect 20, Mini-Exam 5 , Discuss Ch.28, Maxwell's Eqns	Lab 8: Currents and Voltages in RLC Circuits
M 3 Nov T 4 Nov W 5 Nov Th 6 Nov	Problem set #19 due Lect 21 Discuss Ch. 29, Electromagnetic Waves Problem set #20 due Lect 22, Discuss Ch. 29, Properties of Light	Lab 9: Light and Lasers
M 10 Nov T 11 Nov W 12 Nov Th 13 Nov	Problem Set #21 due NO classes Veteran's Day Problem set #22 due Lect 23, Discuss Ch. 30, Optical Images	No lab classes this week
M 17 Nov T 18 Nov W 19 Nov Th 20 Nov	Problem set #23 due Lect 24 Discuss Ch.31, Optical Images Problem set #24 due Lect 25 Mini-Exam 6 , Discuss Ch. 31, Interference, Diffraction	Lab 10: Optical Instruments Part I
M 24 Nov T 25 Nov W 26 Nov Th 27 Nov	Problem set #25 due Lect 26 Discuss Ch. 32, Interference and Diffraction No classes, Thanksgiving Holiday No classes, Thanksgiving Holiday	No lab classes this week
M 1 Dec T 2 Dec W 3 Dec Th 4 Dec	Problem set #26 due Lect 27 Discuss Ch. 33, Interference and Diffraction Review for Final Exam Review for Final Exam	No lab classes this week

FINAL EXAM: Wednesday, Dec 10, 10:00 am – 12:00 noon