

Syllabus - General Physics A

PHY 2048C Spring 2014 Sections 1-5

Catalog Description:

General Physics A (5 credit hours). (Pre-requisite: MAC 2311, MAC 2312 is also recommended.) PHY2048L (the lab-component) is a co-requisite. An introduction to mechanics, waves, and thermodynamics for physical science majors, designed to be taken as a sequence with General Physics B (PHY 2049C) and Intermediate Modern Physics (PHY 3101). (*Completing the latter entitles you to a Minor in Physics!*) Calculus is used. PHY 2048C consists of lectures, recitations, laboratory and lots of fun (not mentioned in the catalog) ! Note that this syllabus only applies to students registered for sections 1-5. Section 9 (the “studio” class) has a completely separate (and different) course structure.

The Liberal Studies Program at Florida State University has been designed to provide a perspective on the qualities, accomplishments, and aspirations of human beings, the past and present civilizations we have created, and the natural and technological world we inhabit. This course has been approved as meeting the requirements for Liberal Studies Area V, Natural Science, and in combination with your other Liberal Studies courses, provides an important foundation for your lifelong quest for knowledge.

Text Book:

We will follow the text: *Essential University Physics by Richard Wolfson*, Addison Wesley [NOTE: In PHY 2048 we will use Volume 1, Volume 2 is used for PHY 2049] The Laboratory assignments are available for downloading from the [LONCAPA](#) class web page, see the course schedule below. Students will need to purchase their [iclicker](#) transmitter (clicker) and register it at <http://www.iclicker.com>, using your blackboard account as “Student ID”.

Professors associated with the course:

Faculty	Room	Phone	Office Hours	Email Address
Dr. I. Wiedenhöver Lecturer, Course Leader	119 NRB	644-4189	TR 2-3	iwiedenhöver@physics.fsu.edu
Dr. S. Hill	211 UPL	644 1647	MW 9-10	shill@magnet.fsu.edu
Dr. A.Dobi	120 NRB		MW 5-6pm	aishmaku@fsu.edu
NN				

Note: Due to the renovation of the Keen building, the faculty have temporary offices, which are listed above. We hope to be back in Keen at some point during the spring term.

Class Meetings A) Lectures: Tuesdays and Thursdays

Classes meet in 101 Richards (UPL) from 9:30 to 10:45 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. Your individual scores will be available during the semester via your Blackboard account. 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! See below for more details about LON-CAPA.**

Section	Time: Mondays and Wednesdays	Instructor	Room
1	08:00-08:50	Dr. S. Hill	MCH 0303
2	09:05-09:55	N.N.	MCH 0303
3	10:10-11:00	N.N.	MCH 0303
4	11:15-12:05	Dr. A. Dobi	MCH 0303
5	12:20-01:10	Dr. A. Dobi	MCH 0303

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	107 UPL	
2	Monday	3:45 – 6:45	107 UPL	
3	Monday	7:00pm – 10:00	107 UPL	
4	Monday	1:30 – 4:30	109 UPL	
5	Monday	4:45 – 7:45	109 UPL	
6	Wednesday	12:30 – 3:30	107 UPL	
7	Wednesday	3:45 – 6:45	107 UPL	
8	Wednesday	7:00pm – 10:00	107 UPL	
9	Wednesday	1:30 – 4:30	109 UPL	
10	Wednesday	4:45 – 7:00	109 UPL	

Examinations:

During the semester, there will be **six mini-exams**, one mid-term exam, and one final exam. The subject of the exams may be **any** previously assigned material. All exams except for the final, will be given in these during the first 20 minutes of the Thursday lecture classes (see schedule below). Your best five mini-exams will be counted (see below). These mini-exams account for a large fraction of the final grade and represent a very significant part of the course. Below are a few rules and answers to common questions about these.

1. Six mini-exams will be given during the semester.
2. All mini-exams will be given at the beginning of the lecture.
3. The material covered will be related to recent or previous LON-CAPA assignment topics. (Do not expect to see exact copies of LON-CAPA questions though.)
4. The mini-exam will last 20 minutes and must be handed in by the required deadline.
5. Students arriving late will be required to submit their mini-exam by the same deadline as the rest of the class.
6. Your score will be based on your best five mini-exam scores.
7. Each student is responsible for bringing a working calculator. You are not allowed to utilize equations or physics text programmed into your calculator.
8. 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!
9. Any grading questions you have must be resolved with the professor who set the mini-exam within 2 weeks of the exam.

Completion of Course and Grading:

The course grade will be calculated using the grades from the LON-CAPA problem sets, the mini-exams and iclicker quizzes/attendance, the mid-term exam, 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 all these areas. The total course score will be converted into a letter grade. We will use the table shown below as our guide for determining grades:

Best 5 of 6 Mini-Exams	25%
Iclicker answers/attendance	5%
Mid Term Exam	10%
Final Examination	20%
Laboratory	20%
CAPA homework	15%
Recitation Participation	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 of “F” for the course. You should keep a record of your point totals on LON-CAPA, laboratories and exams.

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 Adams in the Physics Undergraduate Office ~~on the 3rd floor.~~ on the NRB third floor She can be reached either by e-mail or by calling the following: email : mailto: ugrad@martech.fsu.edu Office : ~~304 Keen Building,~~ Phone : ~~644-3245.~~ 214 NRB: 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 class schedule and assignments:

Date	Schedule and Assignments	Laboratory
M 6 Jan T 7 Jan W 8 Jan Th 9 Jan	First class meeting mandatory attendance Lect 1) Ch. 1, Units, Orders of magnitude Discuss Problem set #1 Lect 2) Ch 2, 1D Motion	No lab classes during first week
M 13 Jan T 14 Jan W 15 Jan Th 16 Jan	Problem set #1 DUE Lect 3) Ch. 3, 2D Motion, Problem set #2 DUE Mini-Exam 1 , Lect 4) Ch. 3, 2D and Ch. 4, Forces	Lab 1 "Vectors" Pre-lab exercise due at noon of your lab day!
M 20 Jan T 21 Jan W 22 Jan Th 23 Jan	Martin Luther King Jr. Day, No Classes Lect 5) Ch 4, Newton's Laws, Problem set #3 DUE Problem set #4 DUE Lect 6) Ch. 4, Newton's Laws and Ch.5, Applications	Due to MLK day: No lab classes. But " <u>Pre-lab</u> " exercise on " Scientific use of Excel "
M 27 Jan T 28 Jan W 29 Jan Th 30 Jan	Problem set #5 DUE Lect 7) Ch. 5, Applications of Newton's Laws Problem set #6 DUE Mini-Exam 2 , Lect 8) Ch. 6, Work and Energy	Lab 2 "Error calculation" No pre-"lab" exercise, but exercise during class
M 3 Feb T 4 Feb W 5 Feb Th 6 Feb	Problem set #7 DUE Lect 9) Ch. 7, Energy Conservation Problem set #8 DUE Lect 10) Ch. 7, Forms of Energy	Lab 3 "Determination of Density" Pre-lab exercise due at noon of your lab day!

M 10 Feb T 11 Feb W 12 Feb Th 13 Feb	Problem set #9 DUE Lect 11) Ch. 9, Momentum Problem set #10 DUE Mini-Exam 3 , Lect 12) Ch. 9, Momentum	Lab 4 “Acceleration due to Gravity” Pre-lab exercise... by now you know, right ?
M 17 Feb T 18 Feb W 19 Feb Th 20 Feb	Problem set #11 DUE Lect 13) Ch. 10, Rotational Motion Problem set #12 DUE Lect 14) Ch. 10, Ang. Energy, Angular Momentum	Lab 5 “Collisions and Momentum”
M 24 Feb T 25 Feb W 26 Feb Th 27 Feb	Problem set #13 DUE Lect 15) Ch. 11 Angular Momentum Review for Mid-term Mid Term Exam ,	No labs, prepare for the midterm !
M 3 Mar T 4 Mar W 5 Mar Th 6 Mar	Problem set #14 DUE Lect 16) Ch. 08, Gravity Problem set #15 DUE Lect 17) Ch. 13, Statics	Lab 6 “Centripetal Force”
M 10 Mar - Fr 14 Mar	SPRING BREAK Have a safe and happy week, but don’t leave your brain on the beach when you return to classes next week!	No lab, go out and see what's on the slab - I see you <i>shiver</i> with anticipation.
M 17 Mar T 18Mar W 19 Mar Th 20 Mar	Problem set #17 DUE Lect 18) Ch. 13, Oscillations Problem set #18 DUE Mini-Exam 4 , Lect 19) Ch. 14 Waves	Lab 7 “Static Equilibrium and Torques”
M 24 Mar T 25 Mar W 26 Mar Th 27 Mar	Problem set #19 DUE Lect 20) Ch. 14, Superposition of Waves Problem set #20 DUE Lect 21) Ch.15, Fluids and Gases	Lab 8 “Simple Harmonic Motion”
M 31 Mar T 1 Apr W 2 Apr Th 3 Apr	Problem set #21 DUE Lect 22) Ch.15, Fluids and Gases Problem set #22 DUE Mini-Exam 5 , Lect 23) Ch. 16, Temperature and Heat	Lab 9 “Waves and Resonances”
M 7 Apr T 8 Apr W 9 Apr Th 10 Apr	Problem set #23 DUE Lect 24) Ch. 16, Heat Problem set #24 DUE Lect 25) Ch. 17, Ideal gas law	Lab 10 “Specific Heat and Calorimetry”
M 14 Apr T 15 Apr W 16 Apr Th 17 Apr	Problem set #25 DUE Lect 26) Ch. 18, 1st Law of Thermodynamics Problem set #26 DUE Mini-Exam 6 , Lect 27) Ch. 18, 1st Law of Thermodynamics	No labs this week
M 21 Apr T 22 Apr W 23 Apr Th 24 Apr	Discuss Review CAPA set Lect 29) Ch 19, 2 nd Law of Thermodynamics Discuss Review CAPA set Review for final	No labs this week

Final Exam: Tuesday, April 29th, 7:30 - 9:30 am; Location TBA

Syllabus Change Policy: Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.