

This is a sample syllabus for PHY1020. Students should reference the section syllabus provided at the beginning of the semester for specifics regarding assignments and grade assignments.

**PHY1020 – PHYSICS AND TECHNOLOGY FOR
FUTURE PRESIDENTS
SECTION(S) [X]**

Instructor:
Email:
Office:

Phone:
Office Hours: by appointment (but you
are welcome almost anytime)

Teaching Assistant:
Email:

COURSE DESCRIPTION

PHY1020 is a Liberal Studies course for the non-science major that contains the essential physics that students need in order to understand today's core science and technology issues, and to become the next generation of world leaders. The course empowers students possessing any level of scientific background with the tools they need to make informed decisions and to argue their views persuasively with anyone—expert or otherwise.

The lectures will occasionally cover material that is not in the text. The course will not cover all the material in the text. You are responsible for all the material in the assigned chapters (excluding the parts labeled optional unless stated otherwise in lecture), the material covered during the class periods, and the material in the assigned online work. The goal is that you will find the course interesting, challenging and enjoyable.

COURSE OBJECTIVES

By the end of the course, students will demonstrate the ability to:

- think critically and cogently about causal relationships with scientific reasoning.
- assess previous experimentation and published scientific results.
- critically examine and evaluate scientific observation, hypothesis or model construction.

COURSE MATERIALS

TEXTBOOK

Physics and Technology for Future Presidents by Richard A. Muller. See the publisher's website (<http://press.princeton.edu/titles/9226.html>) and the author's website (<http://www.muller.lbl.gov/teaching/Physics10/PffP.html>).

i>CLICKER REMOTES.

Our classroom is instrumented with an i>Clicker personal response system that allows students to individually answer questions during class and have their answers recorded

into the computer. **You must bring your iclicker remote to every class.** You can buy a transmitter at the FSU Bookstore. Once you have your iclicker, you must register it at www.iclicker.com/registration. Enter your first name, last name, Blackboard login ID (e.g. abc09e), and your Remote ID (the number below the barcode sticker on the back of your iclicker). Be sure to also enter the verification word for their security test and click the enter button. Until you register your iclicker remote I have no way to give you credit for the answers you submit during class. See <http://iclicker.com/dnn/Products/Hardware/RemoteDetails/tabid/152/Default.aspx> for more details about your iclicker remote.

COURSE ASSIGNMENTS AND EVALUATION

EXAMINATIONS

There will be three unit exams, consisting entirely of multiple choice questions. Exams will be administered at the FSU Testing Center located in University Center C, Suite 1200, to the left of the Sportsmanship Statue as you face the stadium. You can find a map at <http://fsu.edu/FSUcampusmap/index.shtml?UCC>. The dates of the exams are given in the class schedule at the end of this document. You must show your FSU ID *with a functioning magnetic strip* to take the exam. The rules and regulations for students at the testing center are in the Course Library on Blackboard.

ONLINE WORK

Online assignments will be made weekly. You can find them in the Assignments tab of the course website on Blackboard. Each week you will have two tasks to do online. First, you will have an essay assignment. Instructions and advice regarding the essay assignments are in the Course Library on Blackboard. Second, you will have a weekly quiz of multiple choice questions that you can answer by carefully reading the relevant chapter of the textbook. You can take each quiz five times, and your highest score will be counted.

IN-CLASS QUIZZES

Reading the designated text chapters before class is required. There will be a short quiz given at the beginning of each Tuesday lecture that will cover the assigned reading.

GRADING

GRADE CALCULATION

Your point total for the course will be determined by a combination of your attendance records, online work scores, and exam scores. You may earn a maximum of 100 points in the course. The three unit exams together will count 50 points. The weekly online assignments count for 40 points: 30 points for the essays and 10 points for the quizzes (see above). In computing your 30 essay points, the ten best essay scores will be used. The weekly in-class clicker quizzes count for 10 points.

Exams	50 pts
Weekly Online Assignments	40 pts
Essays.....	30 pts
Quizzes.....	10 pts
In-class Clicker Quizzes	10 pts

An example of how your total points are computed is in the Course Library on Blackboard. **No extra credit work will be assigned.**

ATTENDANCE

Attendance will be taken, *and experience from previous years shows that your grade is strongly correlated with your attendance record!* For each unexcused absence, students will lose 3 points from their final grade.

FINAL GRADES

Here are the breakpoints for some of the grades:

A-/B+	85 points
B-/C+	73 points
C-/D	60 points
D/F	50 points

What these mean, for example, is that if you earn 85 points, your grade will be no worse than an A-, etc. The breakpoints for A, B, etc. will not be known until after the last exam.

SOME SENSIBLE ADVICE

It will be great if everyone passes this course. Unfortunately, some 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. I will do all I 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 memorize the answers to selected problems.*
- To gain confidence on physics concepts, practice the easier problems first.
- 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.
- Attend all lecture classes.
- Use the textbook. You paid good money for it! Try to find time to look over a chapter before it is covered in class.
- Come and talk to me if you need extra help.
- Find a study partner. *We strongly encourage students to study and learn together.*
- Finally, don't give up or sit for hours trying to understand the homework. Come and discuss your solution with me. Often you will be much closer than you think to being able to solve a problem.

Good luck and I hope you enjoy the course!

COURSE SCHEDULE

Week	Topics to be Covered
1	Chapter 1: Energy
2	Chapter 1: Energy
3	Chapter 2: Atoms and Heat
4	Chapter 2: Atoms and Heat
5	Chapter 4: Nuclei and Radioactivity
6	Chapter 4: Nuclei and Radioactivity
7	Chapter 5: Chain Reactions, Nuclear Reactors, and Atomic Bombs
Exam 1, covering Chapters 1, 2, 4 FSU Testing Center located in University Center C, Suite 1200	
8	Chapter 5: Chain Reactions, Nuclear Reactors, and Atomic Bombs
9	Chapter 6: Electricity and Magnetism
10	Chapter 6: Electricity and Magnetism
11	Chapter 7: Waves, Including UFOs, Earthquakes, and Music
Exam 2, covering Chapters 5, 6, 7 FSU Testing Center located in University Center C, Suite 1200	
12	
13	Chapter 8: Light
14	Chapter 9: Invisible Light
15	Chapter 10: Climate Change
Exam 3, covering Chapters 8, 9, 10 FSU Testing Center located in University Center C, Suite 1200	

UNIVERSITY POLICIES

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 serious illness.

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://fda.fsu.edu/Academics/Academic-Honor-Policy>.)

AMERICANS WITH DISABILITIES ACT

Students with disabilities needing academic accommodation 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/>

FREE TUTORING FROM FSU

On-campus tutoring and writing assistance is available for many courses at Florida State University. For more information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options at <http://ace.fsu.edu/tutoring> or tutor@fsu.edu. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

LIBERAL STUDIES FOR THE 21ST CENTURY

The *Liberal Studies for the 21st Century* Program at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families, and their communities through a broad and critical engagement with the world in which they live and work. Liberal Studies thus offers a transformative experience. This course has been approved as meeting the **Liberal Studies** requirements for **Natural Sciences** and thus is designed to help you become a critical appraiser of the theories of the natural sciences and the facts that support them.

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.