

PHY 2020 INTRODUCTION TO PRINCIPLES OF PHYSICS FALL 2018

COURSE TIME AND LOCATION: MWF, Period 7 – NPB 1002

COURSE INSTRUCTOR: Mr. William Perry
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COURSE PROFESSOR (ONLINE SECTION OF PHY 2020):
Prof. Kevin Ingersent
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OFFICE HOURS:

Ingersent	TBA
Perry	Mon and Fri 3-4 p.m., or by appointment
Basu	Tue 4-5 p.m., Wed 3-4 p.m., or by appointment

Students may visit any of the office hours above.

COURSE WEBSITE: Log in at <http://elearning.ufl.edu>

COURSE COMMUNICATIONS: Please post general question to Canvas Discussions. Please send private questions to William Perry using Canvas Conversations. You will normally receive a reply within one business day. Canvas Conversations are best used for relatively simple communications. If you have a complex or sensitive concern, it would probably be best to request an in-person or phone meeting.

OPTIONAL TEXTS: (1) Douglas Giancoli, *The Ideas of Physics*, published by Brooks/Cole. (2) Paul Hewitt, *Conceptual Physics*, published by Addison-Wesley. Use of one or both of these textbooks may be helpful, but is not required. Each book has several editions that are basically

the same, and many used copies are available. \$20 should buy a decent copy. In general, Hewitt's book is more conceptual with words and pictures, whereas Giancoli is more formal and quantitative. Depending on your learning preferences, you may prefer one book or the other.

PREREQUISITE KNOWLEDGE AND SKILLS: High school math (basic algebra, geometry and trigonometry) is expected.

PURPOSE OF COURSE: The purpose of this course is to expose you, the student, to the foundations and principles of physics—the most basic of the experimental sciences—to give you a greater appreciation of the world around you and how it works. The course is designed for people who do not necessarily have any background in physics. It provides a one-semester overview of the subject and meets the General Education Physical Science (“P”) requirement. It may be useful as preparation for Physics 1 courses such as PHY 2053 and PHY 2048.

COURSE GOALS AND OBJECTIVES: The short version is that by the end of this course, you will understand basic principles of physics and their applications. You will demonstrate this understanding by successfully solving physics problems. It is easy to remember “ $F = ma$ ”, but unless you learn when to use it and how to apply it, knowing it is of no use!

General Education credit: This course offers University of Florida General Education credit in the Physical Sciences program area, for which the area objective is as follows: “Physical science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment and the relevant processes that govern physical systems. Students will formulate empirically-testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.”

To achieve these goals, students will be expected to:

- a) analyze particular physical situations, and thus identify the fundamental principles pertinent to the situations,
- b) apply principles to particular situations,
- c) solve any equations arising from the application of identified principles of physics,
- d) communicate results unambiguously.

General Education credit will be earned only for a grade of C or higher in the course.

Student Learning Outcomes: This course will also assess Student Learning Outcomes covering both content and skills:

Content: Students demonstrate competence in the terminology, concepts, theories and methodologies used within the discipline.

Communication: Students communicate knowledge, ideas and reasoning clearly effectively in written and oral forms appropriate to the discipline.

Critical Thinking: Students analyze information carefully and logically from multiple perspectives, using discipline-specific methods, and develop reasoned solutions to problems.

The Student Learning Outcomes will be assessed through 3 midterm examinations and 1 comprehensive final exam. Exam questions will cover all subjects listed in the syllabus. Typical questions will require students to complete successfully all four steps outlined in the area objectives above. Obtaining the correct result to the question posed in the form requested in the question will be taken as evidence that all four of the steps have been correctly and successfully completed. In some questions, students will be expected to choose between a series of possible explanations of physical outcomes; such explanations may be presented as graphs, numerically or in words. Although knowledge of the fundamental principles of physics is necessary for success in the course, the stress is on understanding how to apply the principles to a variety of situations; rote memorization is minimal.

COURSE EVALUATION: Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations will be open toward the end of the semester and students will be informed at that time. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

COURSE POLICIES

ATTENDANCE POLICY: Role will not be called however your attendance is expected and indeed essential to your success in this course

HOMEWORK POLICY: Homework will be due at the end of class every other Friday, with Homework 7 being the one exception. Homework turned in after the end of class Friday will be considered late and assessed a 50% penalty. Late homework will be accepted through the end of class the following Monday.

Homework must be completed on a separate sheet of paper from the assignment sheet. If your homework solutions span multiple pages, you must bind them together with a staple or paper clip. You must show all work on your homework and box your final answers to receive full credit!

The homework will be graded as follows: two problems on each assignment will be chosen to be graded, and each of these problems will be worth a total of 3 points. Completing or attempting (to a reasonable extent) the remaining problems of the assignment will be worth an additional 4 points. Thus, each assignment will be worth a maximum of 10 points.

EXAM POLICY: There will be 3 in-class midterm exams and a comprehensive final exam. The 3 midterm exams are each worth 15% of your overall score and the final exam is worth 30%.

All exams will be closed note and closed book. A calculator is recommended for the exams, but it must not have internet connectivity; a formula sheet will be provided for each exam. **All exams must be written in pen (black ink).**

MAKE-UP POLICY: Should you have to miss any of the three mid-term exams for a **legitimate** and **documented** reason, **one and only one** make-up is possible. Serious illness or a University sanctioned excused absence qualify, poor performance on an exam does not. To qualify for taking the make-up you must make an arrangement with me no later than one week after the missed exam (unless there are very special circumstances). The make-up will be offered at the end of the semester; it will be a cumulative exam based on the entire course material.

UF POLICIES

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>.

GETTING HELP

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

GRADING POLICIES:

Information on current UF grading policies for assigning grade points can be found in the Undergraduate Catalog; see

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Grades in the course are awarded based on an overall course score made up as follows:

Assignment	Percentage of course total
Homework	25% combined
3 exams	45% (15% for each exam)
1 final exam	30%

GRADING SCALE:	90%	A
	80%	A-
	75%	B+
	70%	B
	65%	B-
	60%	C+
	55%	C
	50%	C-
	45%	D+
	40%	D
	35%	D-

COURSE SCHEDULE:

Wednesday	August 22	COURSE BEGINS
Friday	Aug. 31	HW 1 due
Friday	Sep. 14	HW 2 due
Friday	Sep. 21	Exam 1
Friday	Sep. 28	HW 3 due
Friday	Oct. 12	HW 4 due
Wednesday	Oct. 19	Exam 2
Friday	Oct. 26	HW 5 due
Friday	Nov. 9	HW 6 due
Friday	Nov. 26	Exam 3
Wednesday	Nov. 30	HW 7 due

Final Exam: Monday, December 10, 3:00 p.m. – 5:00 p.m.

DISCLAIMER: This syllabus represents the instructor's current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.