

# PHY2053: Physics 1 (UFO) - 17622

## Your Instructor

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Please use Canvas inbox to contact me

Office Hours: TBD (Canvas Conferences) and by appointment

## Course Description

**PHY2053 - Physics 1:** This course is a first semester of algebra-based introductory physics. The topics covered include kinematics, Newton's laws, circular and rotational motion, equilibrium, elasticity, energy, momentum, fluids, oscillations, waves, and sound. 4 credits

**Prerequisite Knowledge and Skills:** Basic algebra, geometry, and trigonometry

### General Education Classification

[General Education State Core](#) Category: Natural Sciences

UF General Education Subject Area Objectives: [Physical Sciences \(P\)](#)

*A minimum grade of C is required for general education credit.*

## Course Objectives

By the end of this course, students will have improved their existing foundation in the concepts, principles, terminology, and methodologies used to describe motion (translational, rotational and combined) of simple objects, the basic properties of matter, harmonic oscillations, and wave motion. Specifically, students will be able to:

1. **Analyze** particular physical situations, and thus identify the fundamental principles pertinent to those situations to make successful predictions of system behavior,
2. **Apply** fundamental principles to formulate mathematical equations describing the relation between physical quantities in these particular situations,
3. **Solve** mathematical equations to find the values of physical quantities, and
4. **Communicate** unambiguously both the principles that apply to a situation and the results of specific calculations resulting from the steps above.

# Student Expectations

To achieve the learning outcomes, students are expected to:

- Visit the weekly module page at the beginning of the week to understand the module learning objectives and to plan your engagement with course content for the week ahead.
- Read the assigned chapters in the textbook and view the corresponding lecture videos.
- Work through the examples presented in the text and in the practice problem videos in order to learn the physics concepts, principles, and problem-solving techniques of introductory physics.
- Complete reading quizzes and homework assignments to self-assess your understanding of the module's concepts and problem solving strategies on a weekly basis.
- Seek help from your instructor and other students when specific content does not make sense, and seek out additional practice when needed to gain mastery before moving on to future modules. These additional materials are provided on each module page and in *MasteringPhysics* to help diagnose, and offer remediation, until you feel comfortable and confident in the physics you have learned.
- To seek help from university resources to support student success, which include use of peer tutoring (UF Teaching Center and Knack), peer mentoring, and wellness resources found at <http://studentsuccess.ufl.edu>

***This course requires an extensive amount of time to do all of the above, and students should plan accordingly to spend 12 hours per week on course preparation and practice.***

## Student Learning Outcomes (SLOs)

By the end of this course, students will be expected to achieve the [General Education](#) learning outcomes as follows:

### Content

By the end of the course, students will be able to identify, describe, and explain the fundamental principles of algebra-based mechanics, including the mathematical description of linear and rotational kinematics, Newton's laws, conservation of energy, conservation of linear and angular momentum, Newton's law of gravitation, fluid statics and dynamics, and oscillation and wave physics.

- **Assessments:** All assignments offer opportunities for students to demonstrate their mastery of the physics content covered in this course.

### Critical Thinking

By the end of the course, students will be able to critically evaluate, analyze, and solve physics problems by developing a solution strategy and producing a correct solution to a given problem.

- **Assessments:** Individual weekly homework, weekly group problem-solving, weekly formative quizzes, 3 summative exams.

### Communication

By the end of the course, students will be able to unambiguously communicate orally and in writing their understanding of physics concepts by successfully explaining how to solve a problem they have not previously seen.

- **Assessments:** During-lecture clicker questions (oral), weekly group problem-solving (oral), weekly formative quizzes (written).

## Required Materials

The required text is *College Physics, a strategic approach, by Knight, Jones and Field, 4<sup>th</sup>ed*, published by Pearson. The course is set up for an All-Access opt-in to purchase the text online for students who have registered in the course.

You MUST participate in the UF All Access program. There is no other way to gain access to the homework system.

The required online homework system is *MasteringPhysics*, access to which is included in the purchase of the online textbook described above. Access *MasteringPhysics* using the "MyLab and Mastering" link provided in the Canvas navigation.

In addition, you need access to a computer with a video camera, a microphone, and a good internet connection. In order to take exams under the supervision of Honorlock, these technology resources must be available in a quiet room where you can take the exams in private.

## Canvas and Computing Information

Canvas is the where course content, grades, and communication will reside for this course.

- For Canvas, Passwords, or any other computer-related technical support contact the [Computing Help Desk:\(Links to an external site.](#)
  - <http://helpdesk.ufl.edu/>
  - (352) 392-HELP (4357)
  - [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)

## Course Policies

**ATTENDANCE POLICY:** You are expected to watch the lecture and problem-solving videos and to complete the online reading quizzes, homework, and exams by their assigned deadlines. You are also expected to interact with the instructor and with your fellow students through discussions of the material through the Canvas discussion forum. Computer failure and breakage and other technology issues associated with the operation of the computer are in the hands of students. Accommodations will not be made for absences due to technology issues.

**ASSIGNMENT POLICY:** Homework, reading quiz, and exam windows are announced in the course calendar and appear at the bottom of this page

**HOMEWORK POLICY:** Homework sets are completed online through *MasteringPhysics* at any time between the opening of the assignment and the deadline announced in the course calendar. These assignments are not timed or proctored, but they are subject to the UF Policy on Academic Misconduct (see below).

It is permissible to seek assistance or collaborate on homework with your instructor or your peers. This assistance may include help with interpreting the problem, identifying relevant information in the textbook or course videos, or identifying one's errors. No credit is available for late assignments. (See "Canvas Information" above and "Getting Help" below for what to do in the event of technical problems with the Canvas e-Learning system or Honorlock, the proctoring system.)

**EXAM POLICY:** Three mid-term exams and a final exam will be taken online, each under the supervision of HonorLock during a time window announced in the course calendar. Exams are not collaborative and are completed alone. Details are in the introductory material.

**CLASS DISCUSSION:** Each week will introduce a new module (chapter) on physics. Please post your observations or questions on the material, or help answer your fellow classmates' questions, using the Canvas discussion forum. Your discussion postings are graded based on the quality of the questions posed about course content, the quality of the feedback offered to other students, and the amount of interaction you offer to the course. Discussion postings are evaluated four times throughout the semester, coinciding with each exam. These are graded assignments, not extra credit.

Discussions are moderated to ensure posts remain on topic. Any harassment or inappropriate posts will be removed. After a warning, subsequent inappropriate posts will be deleted and the individual will lose access to discussion boards.

**MAKE-UP POLICY:** Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found [here](#). For a foreseeable absence, it is your responsibility to identify yourself as requiring an accommodation at least one week prior to the absence. Documentation is

required with your make-up request. If you have a planned absence during the exam window, please notify your instructor so that he may evaluate if your request meets the excused absence policy and if a make-up exam is allowed.

## Assessments and Grade Calculation

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

<u>Assignment</u>	<u>Weight</u>
<b>Exam 1</b> (Modules 1-4)	18
<b>Exam 2</b> (Modules 5-8)	18
<b>Exam 3</b> (Modules 9-11)	18
<b>Exam 4</b> (Modules 12-14)	18
<b>Homework</b>	15
<b>Reading Quizzes</b>	5
<b>Discussion Postings</b>	8
<b><u>Total Course Points</u></b>	100

**Exams:** Each exam covers content primarily from each of the four units. However, physics is cumulative, and you will see many physics concepts utilized throughout the semester. Exam guidance and practice is provided in Modules 4, 7, 11, and 14. There are 15 questions per exam. Each exam is weighted 18% of the overall course grade.

**Homework:** The best way to learn physics is by doing physics. These weekly curated collection of practice problems allow you to learn physics by attempting physics

problems in a low-stakes environment, where you are offered multiple attempts for each question part until you get the problem correct. Occasionally, hints will guide you along the correct solution path. The lowest homework score is dropped. MasteringPhysics assignment scores are manually synced to Canvas Grades weekly following the assignment deadline.

**Reading Quizzes:** Reading is critical for your conceptual understanding! You will take conceptual reading quizzes weekly on the assigned readings. These are generally multiple choice questions with one attempt at each question. The answers are withheld until after the quiz is due. Although you will get an immediate score after submitting each question. The lowest quiz score is dropped.

**Discussion Postings:** This is where you ask questions about confusing parts of physics every week. It's the best way to raise your hand and ask a question and everyone else will be thankful that you did! If you don't have questions, then discuss how the current module's topics applies to your life. Please make use of this space to help out your fellow classmates and answer their questions as well.

## Grade Scheme

The following grading standards will be used in this class:

Grade	Range
A	100 % to 80%
A-	< 80 % to 75%
B+	< 75 % to 70%
B	< 70 % to 65%
B-	< 65 % to 60%
C+	< 60 % to 55%
C	< 55 % to 50%
C-	< 50 % to 45%
D+	< 45 % to 40%
D	< 40 % to 35%
D-	< 35 % to 30%
E	< 30 % to 0.0%

# Academic Honesty Policy and Honor Code

In order to maintain a high standard of academic integrity and assure that the value of your University of Florida degree is not compromised, course exams will be proctored.

- You are not permitted to utilize any resources in addition to what is provided during the exam.
- You are not permitted to discuss the contents of the exam following its administration.
- You are not permitted to receive any information prior to taking the exam about the exam contents.

Violation of any of these conditions is academic misconduct and will be dealt with according to the protocols for reporting Honor Code violations. This is your only warning and if you have questions about whether an action constitutes a violation, you should consult your instructor prior to following the course of action in question.

## Honorlock

You will take your exam electronically using the course website and these exams will be proctored with Honorlock. Honorlock is an online proctoring service that allows you to take your exam from the comfort of your home. You DO NOT need to create an account, download software or schedule an appointment in advance. With Honorlock, there is no scheduling required with a testing proctor, and you can complete the exam anytime during the 48 hour testing window. Please make sure you complete and submit the exam before the end of the testing window. You will need a computer, working webcam, speakers, microphone and reliable Internet connection to be able to take your exams. Wireless internet is not recommended. You may also need a mirror or other reflective surface. **Google Chrome is the only supported browser for taking exams in Canvas.**

**Important:** Prior to each exam, visit the [Honorlock system check](#) to evaluate your equipment and software. Also, take the practice quiz, worth 0 points, to get familiar with the Honorlock procedure for beginning and taking proctored exams.

Download and read through the handout for an overview of test-taking tips and requirements. There will be questions answerable from information presented on this handout on your syllabus quiz.

When you are ready to test, log into Canvas, go to your course, and click on your exam. Clicking "Launch Proctoring" will begin the Honorlock authentication process, where you will take a picture of yourself, show your ID, and complete a scan of your room. Honorlock will be recording your exam session by webcam as well as recording your screen. Honorlock also has an integrity algorithm that can detect search-engine use, so

please do not attempt to search for answers, even if it's on a secondary device (which are not permitted anyways).

## Getting Help

Honorlock support is available 24/7/365. If you encounter any issues, you may contact them by live chat, phone (855-828-4004), and/or email ([support@honorlock.com](mailto:support@honorlock.com)).

If you experience any difficulties with the proctoring system, contact Honorlock's free 24/7 LiveChat and phone support. The LiveChat is available by clicking on the chat window at the bottom right of the exam. Of course, the support team can't answer questions to help you answer questions about the contents of the exam, but they will be willing to diagnose and offer solutions for technical difficulties with the proctoring system.

## Course Schedule and Calendar

On Sunday of each week, a new module will become available providing access to lecture videos, worked example videos, and a homework assignment (generally due eight days later on the following Monday at 11:59pm EST), and a reading quiz. Further, an adaptive homework assignment may be offered for additional practice based on your total homework assignment score.

An exam window opens for 48 hours during an exam week beginning on the Tuesday of the exam week (at 12:00am EST) and closing on the following Wednesday (at 11:59pm EST). Exam 4 is offered on the dates listed below in the calendar. Please note that Florida observes Daylight Savings Time.

Module	Week Starting	Topics
<b>Unit 1: Kinematics and Newton's Laws</b>		
1	8/22	<b>Course Intro, Units, Scientific Notation, and Standards</b> <i>Reading: 1.1-1.3, 1.5, 1.6, 3.1, 3.2</i>
2	8/25	<b>Motion Along a Straight Line</b> <i>Reading: 2.1 –2.7</i>



3	9/1	<b>Motion in a Plane</b> <i>Reading: 3.1-3.6, 3.8</i>
4	9/8	<b>Force and Newton's Laws of Motion</b> <i>Reading: 4.1-4.7, 5.3</i>
<b>EXAM 1: Unit 1, Modules 1-4 with Honorlock</b> <b>Availability Dates: 9/17 (Tuesday) – 9/18 (Wednesday)</b>		
Unit 2: Applied Newtons' Laws, Circular and Rotational Motion		
5	9/15	<b>Application of Newton's Laws</b> <i>Reading: 5.1-5.3, 5.5-5.8</i>
6	9/22	<b>Circular Motion and Gravity</b> <i>Reading: 3.7, 6.1-6.6</i>
7	9/29	<b>Rotational Motion</b> <i>Reading: 7.1-7.7</i>
<b>EXAM 2: Unit 2, Modules 5-7 with Honorlock</b> <b>Availability Dates: 10/8 - 10/9</b>		
Unit 3: Equilibrium, Energy, and Momentum		
8	10/6	<b>Equilibrium and Elasticity</b> <i>Reading: 8.1-8.4</i>

9	10/13	<b>Energy and Work</b> <i>Reading: 10.1-10.6, 10.10</i>
10	10/20	<b>Momentum</b> <i>Reading: 9.1-9.7, 10.9</i>
<b>EXAM 3: Unit 3, Modules 8-10 with Honorlock</b> <b>Availability Dates: 10/29 - 10/30</b>		
Unit 4: Fluids, Oscillations, and Waves		
11	10/27	<b>Fluids</b> <i>Reading: Chapter 13</i>
12	11/3	<b>Oscillations</b> <i>Reading 14.1-14.7</i>
13	11/10	<b>Traveling Waves and Sound</b> <i>Reading: 15.1-15.7</i>
14	11/17	<b>Superposition and Standing Waves</b> <i>Reading: 16.1-16.7</i>
<b>EXAM 4: Unit 4, Modules 11-14, with Honorlock</b> <b>Availability Dates: 12/9 (Monday) – 12/10 (Tuesday)</b>		

## Institutional Policies and Procedures

### **UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH**

**DISABILITIES:** Students requesting accommodation for disabilities must first register with the Disability Resource Center (352-392-8565, [http://www.dso.ufl.edu/drc/Links to an external site.](http://www.dso.ufl.edu/drc/Links%20to%20an%20external%20site.)) by providing appropriate documentation. 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 [https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/Links to an external site.](https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/Links%20to%20an%20external%20site.).

**\*\*NETIQUETTE: COMMUNICATION COURTESY:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.

<http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>[Links to an external site.](#)

**COURSE EVALUATION:** Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [https://gatorevals.aa.ufl.edu/students/Links to an external site.](https://gatorevals.aa.ufl.edu/students/Links%20to%20an%20external%20site.). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [https://ufl.bluera.com/ufl/Links to an external site.](https://ufl.bluera.com/ufl/Links%20to%20an%20external%20site.). Summaries of course evaluation results are available to students at [https://gatorevals.aa.ufl.edu/public-results/Links to an external site.](https://gatorevals.aa.ufl.edu/public-results/Links%20to%20an%20external%20site.).

**ATTENDANCE AND MAKE-UP POLICY:** Excused absences and allowances for make-up work are consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) [Links to an external site.](#) and require appropriate documentation.

**Disclaimer:** This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity or to react to weather-related closures. Such changes, communicated clearly, are not unusual and should be expected.