



# PHY2053 Syllabus

**PHYSICS 1**  
3 CREDITS  
SPRING 2017

*"Nothing happens until something moves."* — Albert Einstein

**INSTRUCTOR:** Dr. Shawn Weatherford  
**PHONE:** 352-391-8747  
**OFFICE HOURS:** M: 7pm-8pm  
W: 2pm-3pm

Office hours will be held online using Canvas conferences or by phone. Appointments are available for additional office hours during regular business hours, using Canvas or via face-to-face in my office, NPB2142. Email Dr. Weatherford in Canvas for availability.

**COURSE WEBSITE:** <https://ufl.instructure.com/courses/336164>

**Questions about lab materials or course content:** Please use the [Course Questions Discussion Board](#) in Canvas for all questions about class mechanics or content. If you have a question about the class or subject material, others probably share the same question and posting it to the discussion boards allows everyone to see the question and answer (This is just as if you had raised your hand in class and asked the question). If you use email to ask a general class related question, you will be asked to post your question on the appropriate board, and it will be answered there.

**Personal questions, problems, or appointments:** Please use the **email function in Canvas** to communicate with Dr. Weatherford during the semester, rather than regular university email, except in extreme emergencies. Email, discussion posts, and phone messages will generally receive a reply within 24 hours on the weekdays. Dr. Weatherford will post an announcement when there are times that he is out of reach.

**Technical support:** If you experience difficulties with accessing components of the site, including lectures, quizzes or tests, contact the UF help desk *immediately*. **(352) 392-HELP (4357) | [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)**

If they are not able to resolve your problem, contact Dr. Weatherford with your help desk ticket number and a description of the problem and steps taken to resolve it. Extensions for due dates will be granted for documented technical problems, as needed.

**REQUIRED RESOURCES:** The required text is [College Physics](#), third edition, by Knight, Jones, and Field, 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. The opt-in procedure begins with this



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link: <https://www.bsd.ufl.edu/G1CO/IPay1f/start.aspx?TASK=INCLUDED>, which is also listed on the course Canvas website with further instructions.

The required online homework system is *Mastering Physics*, access to which is included in the purchase of the online textbook described above. Access *Mastering Physics* using the link provided in the course Canvas website.

In addition, a ProctorU registration and scheduling is required for examinations. 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 ProctorU, these technology resources must be available in a quiet room where you can take the exams in privacy.

## **COURSE DESCRIPTION:** PHY2053

This course is a first semester of algebra-based introductory physics ("Physics 1"). The topics covered include kinematics, Newton's laws, circular and rotational motion, equilibrium, elasticity, energy, momentum, fluids, oscillations, waves, and sound. It is typically followed by a second semester course, PHY2054 ("Physics 2"), covering electromagnetism.

**PREREQUISITE KNOWLEDGE AND SKILLS:** High-school physics or PHY 2020, basic algebra, geometry, and trigonometry.

**PURPOSE OF COURSE:** The purpose of this course is to provide you, the student, with a foundation in the concepts, fundamental principles, and analytic techniques needed to solve problems arising in the context of Newtonian mechanics. Examples include knowing how to calculate the maximum height of a projectile, the tension in a support beam, the velocity of an object after a collision, the pressure at a given depth in a fluid, and the resonant sound frequencies in an open pipe. The course is designed for people who have already had a basic introduction to physics in high-school or otherwise.

**COURSE GOALS AND/OR OBJECTIVES:** By the end of this course, students will have a solid 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:

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



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**INSTRUCTIONAL METHODS:** This course runs primarily in the Canvas e-Learning system, which can be accessed through <http://elearning.ufl.edu/>. Students are expected to read the assigned chapters in the textbook and to view the corresponding lecture videos and practice problem videos in order to learn the physics concepts, principles, and problem-solving techniques of introductory physics. To help you stay on track, online reading quizzes and quantitative homework problems are assigned each week to assess your understanding of the concepts and principles presented and your ability to calculate the solution to posed physics exercises.

## COURSE POLICIES:

**ATTENDANCE POLICY:** You are expected to watch the lecture and problem solving videos and to attempt 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.

**ASSIGNMENT POLICY:** Homework, reading quiz, and exam windows are announced in the course calendar, which may be accessed via the Canvas "Syllabus" link.

**HOMEWORK AND READING QUIZ POLICY:** Reading quizzes and homework sets are completed online through *Mastering Physics* 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). Collaboration is not permitted on reading quizzes. It is permissible to seek assistance or collaborate on homework with your instructor or your assigned study group partners only. 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 "Getting Help" below for what to do in the event of technical problems with the Canvas e-Learning system.)

**EXAM POLICY:** Three mid-term exams and a cumulative final exam will be taken online, each under the supervision of ProctorU during a time window announced in the course calendar. Exams are not collaborative and are completed alone. You need both to register with ProctorU and to schedule each exam with ProctorU at least 72 hours (3 full days) ahead of time. Details are in the introductory material.

**STUDY GROUP DISCUSSION POLICY:** 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 for bonus participation points. Bonus participation points are assigned four times throughout the semester, coinciding with each



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exam. Bonus participation points are determined by evaluating quality of your discussion postings to encourage group discussion or assistance.

**STUDY GROUP PERFORMANCE POLICY:** Each student will be assigned to a study group consisting of three students. These study groups are designed for students to provide each other assistance, when permitted by course policies. To reward effective group communication and collaboration, study groups are eligible to receive a performance bonus of one point per exam for each member of the study group. This performance bonus will be awarded to each member's raw exam score *if* the *total* number of points earned by all members of their group sums to at least 40 points (of a maximum of 60 points) on midterm exams, and 49 points (of a maximum of 75 points) on the final exam. Study groups are reassigned after each midterm exam by the instructor.

**STUDY GROUP MEMBERSHIP POLICY:** Students will create and abide by a clear set of expectations agreed upon by all study group members, as defined in a study group contract. This contract will include the option to recommend to the instructor to eject group members from a group based on documented evidence of contract violations. Members ejected from a group by the instructor are not eligible for the study group performance bonus or the study group discussion bonus.

**MAKE-UP POLICY:** Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. For a foreseeable absence, it is your responsibility to identify yourself as requiring an accommodation at least one week prior to the absence.

## 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 <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.



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**\*\*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>

## GETTING HELP:

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

\*\* Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

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:

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

Assignment	Max Points
Exam 1	20
Exam 2	20
Exam 3	20
Final Exam	25



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Homework	10
Reading Quizzes	5
<b>Total Course Points</b>	<b>100</b>
Bonus discussion points	2
Bonus group performance	4

Your course grade will not be assigned based on a curve, but based on a 100-point fixed scale:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
85	80	75	70	65	60	55	50	45	40	35	<35

## COURSE SCHEDULE:

Wk #	Week Starting	Exams	Topics
0	1/4/17		Orientation, introductions, and math review
1	1/9/17		Notation, standards, and units
2	1/16/17		Motion along a straight line
3	1/23/17		Motion in a plane
4	1/30/17		Force and Newton's laws of motion
5	2/6/17	Exam 1	Applications of Newton's laws



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		(Weeks 1-4)	
6	2/13/17		Circular motion and gravity
7	2/20/17		Rotational motion
8	2/27/17	Exam 2 (Weeks 5-7)	Equilibrium and elasticity
9	<b>3/6/17</b>		<b>Spring Break</b>
10	3/13/17		Energy and work
11	3/20/17		Momentum
12	3/27/17	Exam 3 (Weeks 8-11)	Fluids
13	4/3/17		Oscillations
14	4/10/17		Traveling waves and sound
15	4/17/17		Superposition and standing waves
16	4/24/17	Exam 4 (Weeks 12-15; cumulative)	

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. Such changes, communicated clearly, are not unusual and should be expected.