

Course Syllabus: PHY 2060 - Enriched Physics 1 - Spring 2022

Instructor

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Class meeting times

Tuesday and Thursday , Periods 6&7 (12:50 pm - 2:45 pm) **Room NPB 1002**

Office hours

Tuesday period 3 and **Wednesday period 6**, room NPB 2073. All office hours are offered in person and Zoom. Please see the Canvas page (Modules) for the corresponding Zoom links.

***** COVID-19 classroom setup and expectations *****

- This is a "face-to-face" class. In addition, students, who wish to attend the lectures remotely may do so by using Zoom for any portion of the course except for the exams. Zoom links for lectures and office hours are available in our Canvas page (in Modules). All students must be physically present for all three exams. Tentative dates for the exams are listed in the Course Schedule Page on Canvas (in Pages).
- Students are encouraged to wear masks in the classrooms and in the building of the Physics Department regardless of vaccination status. Please, have your mask on when you enter the building. Maximum protection is achieved when the mask covers your mouth and nose at all times.
- Do not come to the classroom if you are feeling ill, if you have been asked to isolate or quarantine, or if you are not currently cleared for on-campus status via One.UF.
- Responsible distancing from others should be practiced at all times while in the classroom.
- If at any point you cannot attend class (in person or via Zoom), please, contact me as soon as possible in order to find an alternative option for you to make up class work and to successfully complete the course requirements.

Course objectives and goals

This is the first course in the Enriched Physics sequence PHY 2060-2061 for students with prior preparation in physics who wish to acquire a deeper understanding of the subject. The enriched sequence covers similar material to the Physics With Calculus sequence PHY 2048-2049, but treats basic topics at a faster pace, incorporates more advanced material, and places greater emphasis on instilling conceptual understanding and on developing the ability to solve more challenging problems. PHY 2060 treats concepts in classical mechanics, including kinematics, dynamics, conservation laws, oscillations, and special relativity.

On completion of this course, students should have a sound understanding of key concepts in classical mechanics and special relativity, be able to apply physics laws and principles to analyze scientific graphs and data, and to provide quantitative solutions to a wide range of physics problems.

Textbook

Resnick, Halliday, Krane: "Physics", Volume 1 [5th Edition, Wiley, ISBN 9780471320579]. Access to the material in the textbook is required. Homework assignments are based on problems in the textbook.

Prerequisites

PHY 2060 is not designed to be a first course in physics.

- You should have studied physics at the high-school level. Completion of an AP course is helpful but not essential. However, if you have had no physics in high school, you will be at a significant disadvantage.
- You need to be proficient at algebra, at geometry and trigonometry (see page A-20 of the textbook), and at performing elementary vector operations (see Sec. 2-2 of the textbook).
- You should have successfully completed MAC 2311 Calculus 1 or equivalent, and have taken or be currently be enrolled in MAC 2312 Calculus 2. The course will make extensive use of differentiation, and at several points during the semester you will be expected to complete problems involving integration. The section “Derivatives and Integrals” on page A-21 of the textbook contains a useful summary of the calculus results that you will need. If you are in doubt as to whether you should take PHY 2060 or one of the alternatives (such as PHY 2048), please consult the instructor immediately.

Course Structure

This is a face-to-face course with an option to attend lectures remotely. The course utilizes Canvas as an educational shell to organize and post course content, lectures, videos, assignments, and to post student grades. It is also used for announcements, e-mail communication with students as well as for student discussions. The course lectures are delivered live in class during the UF assigned meeting time (see Class meeting times above). Students can attend and participate in the lectures by using the HyFlex capability of the classrooms that allow the students to view the blackboard and the computer screen of the instructor in Zoom, as well as to ask questions during lecture time.

The course is organized in 15 weekly modules on Canvas. Each module consists of :

- **Tuesdays: two-hour face-to-face meeting.** The meetings include lectures, discussions, work in small groups. Lecture notes will be posted. Homework is being assigned on Friday and it is due the following Friday by 10 pm on Canvas.
- **Thursdays: two-hour face-to-face meeting.** The meetings include lectures, discussions, work in small groups. Lecture notes will be posted.
- **Office Hours:** Tuesday period 3 and Wednesday period 6. All office hours are offered in person and virtually on Zoom.
- Each lecture is preceded by a **reading assignment** listed in the “Class Schedule”;
- The lecture material is followed by a **weekly homework assignment** submitted on Canvas through the “Assignment” tool (every Friday by 10 pm).
- The students are assessed by **two midterm exams** and **one final exam** (see the class schedule for exact exam dates). All exams are weighted equally, 25% each.
- **Weekly Office Hour:** Tuesday period 3 and Wednesday period 6 in person in room NPB2073. You can also attend by Zoom. Students are also encouraged to communicate by e-mail or schedule an alternative meeting time using Zoom if needed. Zoom link for the office hours is provided on Canvas.

Separate modules on Canvas are dedicated to:

- **Homework solutions**
- **Exam solutions**

Graded material:

- Homework: due on Friday by 10 pm (see below for details)
- Exams: two midterm exams and a final exam (see below for details)

The final grade is calculated as "Final Grade" = (75%"Exam Grade" + 25%"Homework Grade").

Reading assignments

You are expected to read the material to be covered in each lecture **before** coming to the class. The reading assignments are listed in the class schedule date-by-date. The lectures will cover a large fraction of the material listed in the schedule, but they are not designed to be a substitute for the textbook. The lectures will consist mainly of illustrating concepts with experiments and demonstrations (when possible), discussing additional material omitted in the text, pointing out subtle points and common mistakes, asking questions to find out and clarify misconceptions, and applying the learned concepts to solve problems. The homework and exams will be based on the material covered in lectures as well as topics listed in the schedule.

Homework

Homework will be assigned weekly, and will be posted in the "Assignments" module on Canvas. The homework will be available on Friday and will be due the following **Friday by 10 pm**. You can submit your work as a file (text, image or pdf file) on Canvas. Cooperation on homework is permitted and discussion of problems among students is encouraged. The instructor will not solve homework problems until after the due date for the homework assignment. Each homework set carries a maximum score of 100 points. The final homework score is calculated as an average of all homework scores, dropping the two lowest homework scores. Therefore, there will be no extensions or makeup homework assignments. The only exception is long-term illness or hardship which will be reviewed on a case by case basis.

Exams

There will be two midterm exams and a final exam. The tentative dates and chapters covered in the exams are on the class schedule in Canvas. All exams are closed book. Calculators are allowed provided that your calculator does not have internet access and cannot store pdf or other image files. A list with commonly used physics expressions will be provided by the instructor. If you miss an exam for a documented university sanctioned function or medical reasons there will be a makeup exam scheduled to fit both the instructor and your schedule.

Grading

Grading will be based on a scale from 0 to 100. The final grade is calculated as 75% exams and 25% homework. The conversion to letter grades will be done using the following conversion table after rounding the total number of points to zero decimal places.

A	≥ 85
A-	≥ 78
B+	≥ 71
B	≥ 65
B-	≥ 58
C+	≥ 51
C	≥ 45
C-	≥ 42
D+	≥ 38
D	≥ 35
D-	≥ 30
E	< 30

Inclusion, Diversity and Equity in the classroom

Physics is practiced and advanced by a scientific community of individuals with diverse backgrounds and identities and is open and welcoming to everyone. The instructional team recognizes the value in diversity, equity and inclusion in all aspects of this course. This includes, but is not limited to differences in race, ethnicity, gender identity, gender expression, sexual orientation, age, socioeconomic status, religion and disability. Students may have opportunities to work together in this course. We expect respectful student collaborations such as attentive listening and responding to the contributions of all teammates.

Physics, like all human endeavors, is something that is learned. Our aim is to foster an atmosphere of learning that is based on inclusion, transparency and respect for all participants. We acknowledge the different needs and perspectives we bring to our common learning space and strive to provide everyone with equal access. All students meeting the course prerequisites belong here and are well positioned for success.

For more info and additional resources, see the Physics IDEA webpage.

Class meeting attendance, make-up exams, etc...

Requirements for class meeting attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

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

Accommodations for students with disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

UF grading policies

Information on current UF grading policies for assigning grade points can be found here:

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

Online 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. 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 ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>

The Honor Pledge

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.”

Counseling and Wellness Center

Due to the nature of the environment at the university, it is not uncommon for students to experience stressful situations, and “study harder” sometimes does not seem to work. If you find yourself in this situation, you are encouraged to seek confidential counseling. Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/Default.aspx>, 352-392-1575. For emergencies contact the University Police Department: 352-392-1111 or 911.

Zoom Code of Conduct and Recording

The UF Student Honor Code and Student Conduct Code continue to apply to online behavior. You are expected to be professional and respectful while attending class on Zoom, if we ever need to switch to an online mode of instruction.

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the “chat” feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A class lecture is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To publish means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Technical Problems

If you experience technical difficulties please visit the UF help desk website (<https://helpdesk.ufl.edu/> or call 352-392-4357 AND notify the instructor by email (matcheva@ufl.edu) in a timely manner.