

# Syllabus

## PHY 2049 – Physics 2 with Calculus Natural Sciences – Fall 2022

*This syllabus contains the basic outline of the course organization. For complete details on the course policies, please visit the course Canvas page.*

### Instructors

Office

Phone

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NPB 2025

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NPB 2028

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### Office hours

Office hours for the instructors and discussion section leaders are detailed on the course [Canvas page](#).

### Category

Natural sciences (see [General Education State Core](#)).

General education areas satisfied by the course: Physical Sciences (see [General Education Subject Area Objectives](#)).

### Course objectives and goals

PHY2049 is a calculus-based introduction to general physics, Part II. Topics covered include electric charge as a fundamental property of matter, electrostatics (Coulomb's Law, electric field, electric potential), EMF, capacitors, currents, resistors, electric circuits, magnetic fields due to currents, magnetic forces, inductors, Maxwell's equations, electromagnetic waves, optics, interference. Our goal at all times is to help you understand the basic physical principles so that you can develop a deeper vision of the real world around you. In addition to providing the basic theoretical underpinnings to the subject, we use many examples, "concept questions", physical and virtual demonstrations. We also show many examples of everyday tools and advanced instruments that utilize these principles.

### Prerequisites

- PHY2048 (Physics I with calculus) or similar.
- Algebra, Trigonometry, Analytic Geometry, Vectors
- Calculus 1
- Calculus 2 (co-requisite)

The course will rely heavily on the following level of math (see textbook Appendix E for details). If you are not competent at this level you should take the appropriate refresher course(s) before taking this class; otherwise, you are bound to fail

## Course schedule

The complete course schedule is available on the Canvas page. Note that Exams 1 and 2 are evening assembly exams, whereas the Final Exam is at the time set by the registrar in final's week.

| Mon                                | Tue                                  | Wed                                   | Thu                    | Fri                                  | Sat    | Sun    |
|------------------------------------|--------------------------------------|---------------------------------------|------------------------|--------------------------------------|--------|--------|
| Aug 22                             | Aug 23                               | Aug 24<br><b>Intro</b>                | Aug 25                 | Aug 26<br><b>Ch. 21</b>              | Aug 27 | Aug 28 |
| Aug 29<br><b>Ch. 21</b>            | Aug 30<br>HW Trial (math)            | Aug 31<br><b>Ch. 22</b><br>Quiz Trial | Sep 1<br>Quiz Trial    | Sep 2<br><b>Ch. 22</b><br>Quiz Trial | Sep 3  | Sep 4  |
| Sep 5<br>Labor Day                 | Sep 6<br>HW 1 (Ch. 21-22)            | Sep 7<br><b>Ch. 23</b><br>Quiz 1      | Sep 8<br>Quiz 1        | Sep 9<br><b>Ch. 23</b><br>Quiz 1     | Sep 10 | Sep 11 |
| Sep 12<br><b>Ch. 23</b>            | Sep 13<br>HW 2 (Ch. 23)              | Sep 14<br><b>Ch. 24</b><br>Quiz 2     | Sep 15<br>Quiz 2       | Sep 16<br><b>Ch. 24</b><br>Quiz 2    | Sep 17 | Sep 18 |
| Sep 19<br><b>Ch. 25</b>            | Sep 20<br>HW 3 (Ch. 24-25)           | Sep 21<br><b>Ch. 25</b><br>Quiz 3     | Sep 22<br>Quiz 3       | Sep 23<br><b>Ch. 26</b><br>Quiz 3    | Sep 24 | Sep 25 |
| Sep 26<br><b>Ch. 26</b>            | Sep 27<br>HW 4 (Ch. 25-26)           | Sep 28<br><b>Ch. 27</b><br>Quiz 4     | Sep 29<br>Quiz 4       | Sep 30<br><b>Ch. 27</b><br>Quiz 4    | Oct 1  | Oct 2  |
| Oct 3<br><b>Ch. 27</b><br>Review 1 | Oct 4<br>HW 5 (Ch. 27)               | Oct 5<br><b>Ch. 28</b><br>EXAM 1      | Oct 6                  | Oct 7<br>Homecoming                  | Oct 8  | Oct 9  |
| Oct 10<br><b>Ch. 28</b>            | Oct 11<br>HW 6 (Ch. 28)              | Oct 12<br><b>Ch. 28</b><br>Quiz 6     | Oct 13<br>Quiz 6       | Oct 14<br><b>Ch. 29</b><br>Quiz 6    | Oct 15 | Oct 16 |
| Oct 17<br><b>Ch. 29</b>            | Oct 18<br>HW 7 (Ch. 28-29)           | Oct 19<br><b>Ch. 29</b><br>Quiz 7     | Oct 20<br>Quiz 7       | Oct 21<br><b>Ch. 30</b><br>Quiz 7    | Oct 22 | Oct 23 |
| Oct 24<br><b>Ch. 30</b>            | Oct 25<br>HW 8 (Ch. 29-30)           | Oct 26<br><b>Ch. 30</b><br>Quiz 8     | Oct 27<br>Quiz 8       | Oct 28<br><b>Ch. 31</b><br>Quiz 8    | Oct 29 | Oct 30 |
| Oct 31<br><b>Ch. 31</b>            | Nov 1<br>HW 9 (Ch. 30-31)            | Nov 2<br><b>Ch. 31</b><br>Quiz 9      | Nov 3<br>Quiz 9        | Nov 4<br><b>Ch. 32</b><br>Quiz 9     | Nov 5  | Nov 6  |
| Nov 7<br><b>Ch. 32</b><br>Review 2 | Nov 8<br>HW 10 (Ch. 31-32)<br>EXAM 2 | Nov 9<br><b>Ch. 33</b>                | Nov 10                 | Nov 11<br>Veterans Day               | Nov 12 | Nov 13 |
| Nov 14<br><b>Ch. 33</b>            | Nov 15<br>HW 11 (Ch. 33)             | Nov 16<br><b>Ch. 33</b><br>Quiz 11    | Nov 17<br>Quiz 11      | Nov 18<br><b>Ch. 34</b><br>Quiz 11   | Nov 19 | Nov 20 |
| Nov 21<br><b>Ch. 34</b>            | Nov 22<br>HW 12 (Ch. 33-34)          | Nov 23                                | Nov 24<br>Thanksgiving | Nov 25                               | Nov 26 | Nov 27 |
| Nov 28<br><b>Ch. 34</b>            | Nov 29                               | Nov 30<br><b>Ch. 35</b><br>Quiz 12    | Dec 1<br>Quiz 12       | Dec 2<br><b>Ch. 35</b><br>Quiz 12    | Dec 3  | Dec 4  |
| Dec 5<br><b>Ch. 35</b>             | Dec 6<br>HW 13 (Ch. 34-35)           | Dec 7<br><b>Ch. 36</b>                | Dec 8                  | Dec 9<br>Review 3                    | Dec 10 | Dec 11 |
| Dec 12                             | Dec 13<br>FINAL                      | Dec 14                                | Dec 15                 | Dec 16                               | Dec 17 | Dec 18 |

## Grading

Please visit the course Canvas page for a complete description of the grading policy for exams, homework, quizzes, and iClicker questions. Homework and iClicker questions will not have makeups – a forgiveness factor will be supplied instead.

Your final score (100 points max) is the sum of the following:

- **3 exams:** up to 25 points each, 75 points total
- **13 approx. weekly HW assignments:** 5 points combined
- **10 approx. weekly discussion session quizzes:** 20 points combined
- **iClicker/Participation points during lectures:** 5 *bonus* points

**Note:** In case of cancellation of classes due to unforeseen circumstances, the number of HW and quiz assignments might be adjusted, while the maximum number of points earned in each category stays the same.

Total minimal scores ensuring a particular letter-grade are shown below. In other words, if everyone gets 85 or more, everyone gets an “A”. *Do not expect scores to be curved.*

|    |     |
|----|-----|
| A  | ≥85 |
| A- | ≥80 |
| B+ | ≥75 |
| B  | ≥70 |
| B- | ≥65 |
| C+ | ≥60 |
| C  | ≥55 |
| C- | ≥50 |
| D+ | ≥45 |

## Required material

The following material should be acquired as soon as possible

- **WileyPlus homework passcode which includes access to the electronic text book**

The textbook for the course is *Fundamentals of Physics* by Halliday, Resnick, Walker (Wiley, 12th Edition). *The electronic version is included with the HW access code.* The homework in this course is done online using the WileyPLUS system. Access to the online homework system requires a WileyPLUS access code. Details on how to purchase access to Wiley can be found on the course Canvas page.

- **iClicker software installed**

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

Requirements for class 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>

Further details of the conditions for make-ups are described on the course Canvas page.

## Accommodations for students with disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://disability.ufl.edu/>) by providing appropriate documentation. Once registered, students will receive an accommodation document that must be sent to [phy2049@phys.ufl.edu](mailto:phy2049@phys.ufl.edu) when requesting accommodation. Students 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 feedback on the quality of instruction in this course by completing online evaluations at: <https://ufl.bluera.com/ufl/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments 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

Counseling and Wellness Center: <https://counseling.ufl.edu>, 352-392-1575  
For emergencies, University Police Department (352-392-1111) or 911.

### Diversity and Inclusion

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.

### Covid-19

In response to COVID-19, the following recommendations are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

- If you are not vaccinated, get vaccinated. Vaccines are readily available and have been demonstrated to be safe and effective against the COVID-19 virus. Visit [one.ufl](http://one.ufl) for screening / testing and vaccination opportunities.
- If you are sick, stay home. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 to be evaluated.
- At this time, we do not plan on providing live stream for lectures and discussion sessions. All exams and discussion session quizzes will be conducted in the in-person modality.