



Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

Semester: Spring 2025

Year: 2025

Course Prefix: PHYS

Course and Section #: 2020-X01-X02

Course Title: College Physics II

Credits: 4

Course Description

A continuation of PHYS 2010. Covers electricity, magnetism, waves, sound, optics, and nuclear physics.

Course Attributes

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Dustin Shipp

Student Learning Outcomes

- Understand and apply the wave model of light.
- Understand and apply the ray model of light to lenses and mirrors and common optical instruments.
- Develop a basic understanding of electric charges, forces, and fields.
- Apply knowledge of electric potential to the human body using an EKG sensor.
- Learn how charges move through a conductor in a circuit and understand the fundamental principles that govern electric circuits.
- Apply knowledge of circuit components in a resonance circuit.
- Learn how magnetic fields exert forces on moving charges.
- Explore applications of electromagnetic induction.
- Understand the nature of electromagnetic waves.

- Understand and apply basic principles of AC electricity, electrical safety, and household electricity.
- Understand how special relativity affects time and space.
- Understand the quantization of energy for light and matter.
- Use quantum physics to understand the properties of atoms, molecules, and their spectra.
- Understand the physics of the nucleus and some of the applications of nuclear physics.

Course Materials and Texts

- This course is online and requires a computer with an internet connection. The textbook is free and accessible through links embedded throughout the course.

Course Requirements

Course Assignments, Assessments, and Grading Policy

- Warm-up Activities: 10%
- Discussions: 5%
- Big Problem of the Week: 25%
- Group Peer Evaluations: 10%
- Weekly Quizzes: 15%
- Four Semi-Oral Exams: 25%
- Final Comprehensive Exam: 10%
- Total: 100%

A	94-100	A-	90-93	B+	87-84	B	83-86	B-	80-82
C+	77-79	C	73-76	C-	70-72	D+	67-69	D	63-66
D-	60-62	E	0-59						

Required or Recommended Reading Assignments

- Open Stax College Physics: <https://openstax.org/details/books/college-physics-2e>

General Description of the Subject Matter of Each Lecture or Discussion

- Module 1: Charges, Forces, and Fields
- Module 2: Energy and Potential
- Module 3: Electric Circuits
- Module 4: More Circuits

- Module 5: Magnetic Forces
 - Module 6: Creating Magnetic Fields
 - Module 7: Electromagnetic Induction
 - Module 8: Propagating Electromagnetic Waves
 - Module 9: Lenses
 - Module 10: Mirrors and Optical Systems
 - Module 11: Interference and Diffraction
 - Module 12: Applied Optics
 - Module 13: Quantum Physics
 - Module 14: Nuclear Physics and Special Relativity
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Required Course Syllabus Statements

Generative AI

AI programs are not a replacement for your human creativity, originality, and critical thinking. Writing, thinking, and researching are crafts that you must develop over time to develop your own individual voice. At the same time, you should learn how to use AI and in what instances AI can be helpful to you.

AI is **good** for:

- Brainstorming
- Finding information (you should confirm this yourself, errors are rampant)
- Checking grammar, style, etc.

AI **cannot** be used for:

- Doing your work for you (especially applying physics concepts)
- Writing your conclusions and/or summaries
- Calculations (mostly because AI still gets most of these wrong)

Similarly, students from other groups can be helpful resources when working through the Big Problem of the Week™. You are welcome to reach out to each other or the instructors. However, your group's work must be from your group. Submissions with identical work will not be accepted. Additionally, solutions found to originate from online resources (*e.g.* Chegg, etc.) will not be accepted.

Using Remote Testing Software

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.