

General Physics I

PHYS-201

CG Section 8WK 11/08/2019 to 04/16/2020 Modified 06/16/2022

Course Description

A study of mechanics, gravitation, waves, sound, heat, light, electricity and magnetism, optics and modern physics from a non-calculus perspective.

Requisites

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog \(https://catalog.liberty.edu/\)](https://catalog.liberty.edu/).

Rationale

This course and PHYS 202 provide a basis for further study and careers in all the sciences, particularly the fields of Biology, and Medical and Health Sciences.

Course Learning Outcomes

Upon successful completion of this course, the student will be able to:

- A. Demonstrate a basic understanding of the principles of physics.
- B. Analyze a physical situation using physics principles and concepts.
- C. Apply problem solving skills to work physics problems.
- D. Analyze and interpret laboratory data in order to verify God's natural laws.

General Education Foundational Skill Learning Outcomes (FSLO): Social and Scientific Inquiry (SSI)

SSI 1: Demonstrate an understanding of the impact of science on the world in which we live.

SSI 2b: Demonstrate a biblical understanding of humankind's role in scientific inquiry and discovery.

SSI 3: Apply solutions for a social and/or scientific question experienced in nature or society.

Course Resources

Click on the following link to view the required resource(s) for the term in which you are registered: [Liberty University Online Bookstore \(https://bncvirtual.com/liberty/\)](https://bncvirtual.com/liberty/).

Additional Materials for Learning

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Canvas [recommended browsers \(https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66\)](https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66)
- D. Microsoft Word
- E. Scientific calculator

☰ Course Assignments

Textbook readings, lecture presentations, and embedded videos

Course Requirements Checklist

After reading the Course Syllabus and [Student Expectations \(https://www.liberty.edu/institutional-effectiveness/student-expectations/\)](https://www.liberty.edu/institutional-effectiveness/student-expectations/), the student will complete the related checklist found in the Course Overview.

Watch and Interact Assignments (8)

In each module, you must watch the course videos which cover module-level material. There are short quiz questions interspersed into the videos that you will watch in each module. Answer the question to receive the points for these Video Assignments. These videos are housed in WebAssign (CLOs: A).

Homework: Getting Started with WebAssign Assignment

The student must complete the course orientation assignment in WebAssign and must receive a score of 100% before he/she can start any of the other assignments in WebAssign. The student will be allowed unlimited attempts for this quiz.

CE (Chapter Exercise) Assignments (11)

The student will complete exercises associated with each chapter studied. These exercises will be completed in WebAssign (CLO: A, B, C; FSLO: SSI 1, 2b, 3).

HW (Homework) Assignments (10)

Each module, the student will complete homework assignments which will correlate with the assigned Learn material. These assignments will be completed using WebAssign, and the student will be allowed multiple attempts to answer each question (CLO: A, B, C; FSLO: SSI 1, 2b, 3).

Lab Assignments (3)

The student will complete 3 labs in WebAssign (CLO: B, C, D; FSLO: SSI 3).

Quiz: Exams (3)

The student will complete 3 open-book/open-notes tests throughout the course in WebAssign. Tests are based on the Learn material, homework assignments, exercises, and labs. The student will have 1 hour and 30 minutes to complete each test and must complete each test one sitting (CLO: A, B, C; FSLO: SSI 3).

Quiz: Comprehensive Final Exam

The student will complete a comprehensive, open-book/open-notes Final Exam in WebAssign. The Final is timed and is expected to be completed in one sitting. The student will have 2 hours to complete each test and must complete each test one sitting (CLO: A, B, C; FSLO: SSI 3).

✓ Course Grading

| | |
|--|-----|
| Course Requirements Checklist | 10 |
| Homework: Getting Started with WebAssign | 9 |
| Watch and Interact Assignments (8 at 2 pts ea) | 16 |
| HW [Homework] Assignments (10 at 20 pts ea) | 200 |

| | | |
|---|---------------|-------------|
| CE [Chapter Exercise] Assignments (11 at 10 pts ea) | | 110 |
| Lab Assignments (3 at 25 pts ea) | | 75 |
| Quiz: Chapters 1-4 Exam | (Modules 1–2) | 130 |
| Quiz: Chapters 5-8 Exam | (Modules 3–5) | 130 |
| Quiz: Chapters 10-11, 13-14 Exam | (Modules 6–7) | 130 |
| Quiz: Comprehensive Final Exam | (Modules 1–8) | 200 |
| Total | | 1010 |

Policies

Mathematical Late Assignment Policy

Mathematical assignments that are submitted after the due date without prior approval from the instructor will receive the following deductions

1. Late *mathematical* assignments submitted within one week after the due date will receive a 10% deduction.
2. *Mathematical* assignments submitted more than one week late or after the final date of the course will not be accepted.
3. Discussion board assignments submitted within one week after the due date will receive a 10% deduction.
4. Discussion board submitted more than one week and less than 2 weeks late will receive a 20% deduction.
5. Discussion board submitted more than 2 weeks late will not be accepted.
6. Group projects, including group discussion board threads and/or replies, and assignments will not be accepted after the due date.

Special circumstances (e.g. death in the family, personal health issues) will be reviewed by the instructor on a case-by-case basis.

For other assignments, please refer to the standard Late Assignment Policy, below.

Late Assignment Policy

Course Assignments, including discussions, exams, and other graded assignments, should be submitted on time.

If the student is unable to complete an assignment on time, then he or she must contact the instructor immediately by email.

Assignments that are submitted after the due date without prior approval from the instructor will receive the following deductions:

1. Late assignments submitted within one week after the due date will receive up to a 10% deduction.
2. Assignments submitted more than one week and less than 2 weeks late will receive up to a 20% deduction.
3. Assignments submitted two weeks late or after the final date of the course will not be accepted outside of special circumstances (e.g. death in the family, significant personal health issues), which will be reviewed on a case-by-case basis by the instructor.
4. Group projects, including group discussion threads and/or replies, and assignments will not be accepted after the due date outside of special circumstances (e.g. death in the family, significant personal health issues), which will be reviewed on a case-by-case basis by the instructor.

Disability Assistance

Students with a disability and those with medical conditions associated with pregnancy may contact Liberty University's Online Office of Disability Accommodation Support (ODAS) at LUODAS@liberty.edu for accommodations. Such accommodations require appropriate documentation of your condition. For more information about ODAS and the accommodations process,

including how to request an accommodation, please visit <https://www.liberty.edu/online/online-disability-accommodation-support/> (<https://www.liberty.edu/online/online-disability-accommodation-support/>). Requests for accommodations not related to disabilities or pregnancy must be directed to the Registrar's Office, which generally handles medical needs support.

If you have a complaint related to disability discrimination or an accommodation that was not provided, you may contact ODAS or the Office of Equity and Compliance by phone at (434) 592-4999 or by email at equityandcompliance@liberty.edu. Click to see a full copy of Liberty's [Discrimination, Harassment, and Sexual Misconduct Policy](https://www.liberty.edu/media/1226/Liberty_University_Discrimination_Harassment_and_Sexual_Misconduct_Policy.pdf) (https://www.liberty.edu/media/1226/Liberty_University_Discrimination_Harassment_and_Sexual_Misconduct_Policy.pdf) or the [Student Disability Grievance Policy and Procedures](http://www.liberty.edu/media/8021/Disability_Grievance_Procedures.pdf) (http://www.liberty.edu/media/8021/Disability_Grievance_Procedures.pdf).

Course Attendance

In an effort to comply with U.S. Department of Education policies, attendance is measured by physical class attendance or any submission of a required assignment within the enrollment dates of the course (such as examinations, written papers or projects, any discussion posts, etc.) or initiating any communication with one's professor regarding an academic subject. More information regarding the [attendance policy](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwiki.os.liberty.edu%2Fdisplay%2FIE%2FOnline%2BAttendance%2Band%2BNon-Attendance&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613719138&sdata=%2BNBTsPOoXuHAPLfISQRugK7cRSuV6UyC7qD3agf3l2k%3D&reserved=0) (<https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwiki.os.liberty.edu%2Fdisplay%2FIE%2FOnline%2BAttendance%2Band%2BNon-Attendance&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613719138&sdata=%2BNBTsPOoXuHAPLfISQRugK7cRSuV6UyC7qD3agf3l2k%3D&reserved=0>) can be found in the [Academic Course Catalogs](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.liberty.edu%2Findex.cfm%3FPID%3D791&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613729132&sdata=DjjhMiRBlNF%2B2ZJUC8eBd1OdNb26S9ADukODYsilXIA%3D&reserved=0) (<https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.liberty.edu%2Findex.cfm%3FPID%3D791&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613729132&sdata=DjjhMiRBlNF%2B2ZJUC8eBd1OdNb26S9ADukODYsilXIA%3D&reserved=0>). Regular attendance in online courses is expected throughout the length of the term. Students who do not attend within the first week of a sub-term by submitting a required academic assignment (such as the Course Requirements Checklist, an examination, written paper or project, discussion post, or other academic activity) will be dropped from the course. Students who wish to re-engage in the course are encouraged to contact Academic Advising to discuss their enrollment options. Students who begin an online course, but at some point in the semester cease attending, and do not provide official notification to withdraw, will be assigned a grade of "FN" ([Failure for Non-Attendance](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwiki.os.liberty.edu%2Fdisplay%2FIE%2FUnofficial%2BWithdrawals&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613729132&sdata=MoMvZdPfa69InuhVHMHAVgu59ZP0Fw45xJTU9PIBrU%3D&reserved=0) (<https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwiki.os.liberty.edu%2Fdisplay%2FIE%2FUnofficial%2BWithdrawals&data=02%7C01%7Caccollins2%40liberty.edu%7Cd91431fa6ac547056b5408d833029e1a%7Cbf8218eb3024465a9934a39c97251b2%7C0%7C0%7C637315433613729132&sdata=MoMvZdPfa69InuhVHMHAVgu59ZP0Fw45xJTU9PIBrU%3D&reserved=0>)). Students wishing to withdraw from courses after the official start date should familiarize themselves with the [withdrawal policy](#).

Grading Scale

| A | B | C | D | F |
|----------|---------|---------|---------|-------|
| 900-1010 | 800-899 | 700-799 | 600-699 | 0-599 |

For courses with a Pass/NP final grade, please refer to the Course Grading section of this syllabus for the assignment requirements and/or point value required to earn a Passing final grade.

Add/Drop Policy

The full policy statement and procedures are published in the [Policy Directory](https://wiki.os.liberty.edu/display/IE/Dropping+and+Adding+Online+Classes) (<https://wiki.os.liberty.edu/display/IE/Dropping+and+Adding+Online+Classes>).

Honor Code

Liberty University comprises a network of students, Alumni, faculty, staff and supporters that together form a Christian community based upon the truth of the Bible. This truth defines our foundational principles, from our Doctrinal Statement to the Code of Honor. These principles irrevocably align Liberty University's operational procedures with the long tradition of university culture, which remains distinctively Christian, designed to preserve and advance truth. Our desire is to create a safe, comfortable environment within our community of learning, and we extend our academic and spiritual resources to all of our students with the goal of fostering academic maturity, spiritual growth and character development.

Communities are predicated on shared values and goals. The Code of Honor, an expression of the values from which our Doctrinal Statement was born, defines the fundamental principles by which our community exists. At the core of this code lie two essential concepts: a belief in the significance of all individuals, and a reliance on the existence of objective truth.

While we acknowledge that some may disagree with various elements of the Code of Honor, we maintain the expectation that our students will commit to respect and uphold the Code while enrolled at Liberty University.

Adherence to the principles and concepts established within facilitates the success of our students and strengthens the Liberty community.

The Code of Honor can be viewed in its entirety at <http://www.liberty.edu/index.cfm?PID=19155> (<http://www.liberty.edu/index.cfm?PID=19155>).

Schedule

| When | Topic | Notes |
|-------------------------|-------|---|
| Module 1: Week 1 | Learn | Read: 1 item Watch: 1 item Watch and Interact: 1 item |
| | Apply | HW: Getting Started with WebAssign CE: Units, Trigonometry, and Vectors Assignment CE: Motion in 1-D Assignment HW: Units, Trig, Vectors, and 1-D Motion Assignment |
| Module 2: Week 2 | Learn | Read: 1 item Watch and Interact: 1 item |
| | Apply | CE: Motion in 2-D Assignment HW: Motion in 2-D Assignment CE: Newton's Laws of Motion Assignment HW: Newton's Laws of Motion Assignment Lab: Newton's Laws of Motion Assignment |
| Module 3: Week 3 | Learn | Read: 1 item Watch and Interact: 1 item |
| | Apply | CE: Energy Assignment HW: Energy Assignment Lab: Energy Assignment Quiz: Chapters 1-4 Exam |
| Module 4: Week 4 | Learn | Read: 1 item Watch and Interact: 1 item |

| When | Topic | Notes |
|-------------------------|-------|--|
| | Apply | CE: Momentum, Impulse, and Collision Assignment HW: Momentum, Impulse, and Collisions Assignment Lab: Momentum, Impulse, and Collisions Assignment CE: Rotational Motion and Gravitation Assignment HW: Rotational Motion and Gravitation Assignment |
| Module 5: Week 5 | Learn | Read: 1 item Watch and Interact: 1 item |
| | Apply | CE: Rotational Equilibrium Dynamics Assignment HW: Rotational Equilibrium and Dynamics Assignment Quiz: Chapters 5-8 Exam |
| Module 6: Week 6 | Learn | Read: 1 item Watch and Interact: 1 item |
| | Apply | CE: Vibrations, Waves, and Sound Assignment HW: Vibration, Waves, and Sound Assignment |
| Module 7: Week 7 | Learn | Read: 1 item Watch and Interact: 1 item |
| | Apply | CE: Thermal Physics and Energy Assignment HW: Thermal Physics and Energy Assignment Quiz: Chapters 10-11, 13-14 Exam |
| Module 8: Week 8 | Learn | Read: 1 item Watch and Interact: 1 item |
| | Apply | CE: The Laws of Thermodynamics Assignment HW: The Laws of Thermodynamics Assignment Quiz: Comprehensive Final Exam |