

## Elementary Physics (PHYS 1105)

### CREDIT

1 Semester Credit Hour (0 hours lecture, 3 hours lab)

### MODE OF INSTRUCTION

Online

### PREREQUISITE/CO-REQUISITE:

N/A

### COURSE DESCRIPTION

Conceptual level survey of topics in Physics intended for liberal arts and other non-science majors.

### COURSE OBJECTIVES

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

1. Define basic terminology as related to applied physics.
2. Apply relationships of length, mass, time, and energy to understand various types of motion, forces, and fields.
3. Demonstrate problem-solving techniques related to physics principles including: vectors, motion, mechanics, simple machines, matter, heat, thermodynamics, etc.
4. Answer conceptual level questions related to physics principles including: vectors, motion, mechanics, simple machines, matter, heat, thermodynamics, etc.

### INSTRUCTOR CONTACT INFORMATION

Instructor: Bryan Neal

Email: bkneal@lit.edu

Office Phone: (409)247-5103

Office Location: MPC242

Office Hours: Appointments may be requested by email

### REQUIRED TEXTBOOK AND MATERIALS

1. *College Physics 2e* by Paul Peter Urone and Roger Hinrichs, 2022 Edition. OpenStax.  
<https://openstax.org/details/books/college-physics>
2. Three-ring binder (2 inches recommended) with tabbed dividers.
3. Scientific calculator.
4. Pens or pencils.

Approved: Initials/date



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## ATTENDANCE POLICY

Participation is vital to understanding Physics, so student activity will be recorded weekly in Starfish. Students must avoid receiving a zero grade on the weekly Discussion(s) AND Quiz(zes) or they will lose 20 points for Participation for the week. There may be infrequent chances for students to get small amounts of “bonus” Participation points. **In an online class, absences cannot be excused without documentation covering all 7 days of the week in question.**

## DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an “F” in the course.

## COURSE CALENDAR

| Week | TOPIC                                 | READINGS         | Start             | End               |
|------|---------------------------------------|------------------|-------------------|-------------------|
| 1    | Introduction, Kinematics              | CH1, CH2         | Mo, 06/02         | Su, 06/08         |
| *    | 2-D Kinematics, Dynamics              | CH3, CH4         | Mo, 06/02         | Su, 06/08         |
| 2    | Applications of Newton’s Laws         | CH5              | Mo, 06/09         | Su, 06/15         |
| *    | Group Project – Part A                | Various          | Mo, 06/09         | Su, 06/15         |
| 3    | Circular Motion, Work, Energy         | CH6, CH7         | Mo, 06/16         | Su, 06/23         |
| *    | Momentum, Statics, Torque             | CH8, CH9         | Mo, 06/16         | Su, 06/23         |
| 4    | Rotational Kinematics                 | CH10             | Mo, 06/23         | Su, 06/30         |
| *    | Group Project – Part B                | Various          | Mo, 06/23         | Su, 06/30         |
| 5    | Fluid Statics, Fluid Dynamics         | CH11, CH12       | Mo, 06/30         | Su, 07/06         |
| *    | Temperature, Gas Laws, Kinetic Theory | CH13             | Mo, 06/30         | Su, 07/06         |
| 6    | Heat Transfer, Phase Change           | CH14             | Mo, 07/07         | Su, 07/13         |
| *    | Group Project – Part C                | Various          | Mo, 07/07         | Su, 07/13         |
| **   | MANDATORY Midterm Exam                | CH1 – CH14       | <u>Th</u> , 07/10 | <u>Tu</u> , 07/15 |
| 7    | Oscillations, Waves, Sound            | CH16, CH17       | Mo, 07/14         | Su, 07/20         |
| *    | Electric Charge, Ohm’s Law            | CH18, CH20       | Mo, 07/14         | Su, 07/20         |
| 8    | Circuits, Magnetism, Induction        | CH21, CH22, CH23 | Mo, 07/21         | Su, 07/27         |
| *    | Group Project – Part D                | Various          | Mo, 07/21         | Su, 07/27         |
| 9    | Electromagnetic Waves, Relativity     | CH24, CH28       | Mo, 07/28         | Su, 08/03         |
| *    | Quantum Physics, Atomic Physics       | CH29, CH30       | Mo, 07/28         | Su, 08/03         |
| 10   | Radioactivity, Nuclear Physics        | CH31             | Mo, 08/04         | Su, 08/10         |
| *    | Group Project – Part E                | Various          | Mo, 08/04         | Su, 08/10         |
| **   | MANDATORY Final Exam                  | CH16 – CH31      | <u>Th</u> , 08/07 | <u>Tu</u> , 08/12 |

## COURSE EVALUATION

Final grades will be calculated according to the following criteria:

- |                              |     |
|------------------------------|-----|
| 1. Participation             | 10% |
| 2. Discussions (15)          | 15% |
| 3. Quizzes (15)              | 15% |
| 4. MANDATORY Midterm Exam    | 20% |
| 5. Group Project Average (5) | 20% |
| 6. MANDATORY Final Exam      | 20% |

## **GRADE SCALE**

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

## **TECHNICAL REQUIREMENTS**

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

## **DISABILITIES STATEMENT**

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email [specialpopulations@lit.edu](mailto:specialpopulations@lit.edu). You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

## **STUDENT CODE OF CONDUCT STATEMENT**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu). Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## **ARTIFICIAL INTELLIGENCE STATEMENT**

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses.

## **STARFISH**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

## **ADDITIONAL COURSE POLICIES/INFORMATION**

0. Students should ALWAYS contact the Instructor IMMEDIATELY with ANY concerns.
1. Safety and etiquette must always be observed in any physical or digital environment. Any student who breaks safety rules and/or does not conduct themselves properly in any situation will be removed from class to ensure the safety and comfort of others.
2. Children and/or guests are not allowed in the lecture classroom, the laboratory room, or the instructor's office at any time. This includes any scheduled/unscheduled lessons or meetings.
3. If class times and/or delivery method are incompatible with any student's needs, then the student is responsible for switching to a different class section in the first week. If no suitable options are available, then the student should consider dropping the course.
4. The following small rounding allowances will be made: 89.4X→90→A, 79.4X→80→B, 69.XX→70→C, 59.XX→60→D. No other exceptions will be made.
5. Each week has several electronic assignments due as indicated in the Course Calendar in this Syllabus. The due dates are set and visible in multiple locations in Blackboard.
6. Students are expected to maintain physical and/or digital copies of all resources and scratch work. Course material is "recycled" throughout the semester, and most Activities provide "hints" for future Quizzes and Exams. [It is a VERY bad idea to throw anything away until after the semester ends...]
7. Individual extensions on Quizzes will need to be made in time so that the student can complete the assignment within 1 week of the original due date. Extended Quizzes will have the grade capped at 70. [An 80 would be adjusted to a 70, but a 40 would not be further penalized.]
8. NO OTHER ASSIGNMENTS CAN BE EXTENDED INDIVIDUALLY.
9. In the first half of each week, students should strive to work through the relevant Textbook Chapters, simulations/software, video content, and Discussion Boards.
10. By the end of each week, students should strive to read other students' responses to Discussion Boards, complete the assigned Quiz, and prepare for any upcoming Major Assignments.
11. Students will be notified by Announcement and/or Email if any policies or dates change.
12. Respondus Lockdown Browser [with Monitoring] will be required for the MANDATORY Exams.
13. Participation points can go above 100 with bonus points. This will not be capped. However, if a student technically earns negative Participation points, they will be "rounded up" to zero.
15. To clarify, the MANDATORY Midterm Exam, Project Steps, and MANDATORY Final Exam cannot be late for any reason. Missing any of these will typically cost 2 Final Letter Grades.
16. Discussions cannot be extended because of Blackboard settings.
17. The lowest 2 Discussion grades AND the lowest 2 Quiz grades will automatically be dropped. They will still show in the Gradebook, but they will not count towards the Final Average.
18. Addendum files will be added in the Module 0 Folder in Blackboard to provide more information for complicated assignments. Typically, there will also be Guidance in Announcements.
19. Students should typically expect typed communication responses within two business days.