Elementary Physics I (PHYS 1305 2F1)

CREDIT
3 Semester Credit Hours (3 hours lecture, 0 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.
5. Apply information processing strategies to conceptual and problem-solving questions.
6. Research fundamental laws, formulas, and constants in major areas of Physics.

CORE OBJECTIVES
Upon completion of the required Core Assessment, the student will demonstrate appropriate
1. **Critical Thinking Skills (CT)** - creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
2. **Communication Skills (COM)** - effective development, interpretation and expression of ideas through written, oral and visual communication
3. **Empirical and Quantitative Skills (EQS)** - manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork (TW)** - ability to consider different points of view and to work effectively with others to support a shared purpose or goal

INSTRUCTOR CONTACT INFORMATION

Instructor:	Bryan Neal
Email:	bkneal@lit.edu
Office Phone:	(409)247-5103
Office Location:	MPC215
Office Hours:	Appointments may be requested by email or through Starfish

Approved: Initials/date

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. Respondus Lockdown Browser software
3. Computer with webcam
4. PowerPoint or equivalent software
5. Three-ring binder (2 inches recommended) with tabbed dividers.
6. Scientific calculator (for use outside of Tests/Exams)
7. Pens or pencils.

ATTENDANCE POLICY

Participation is vital to understanding Physics, so student activity will be recorded weekly in Starfish. Students are expected to attend any scheduled meetings and/or participate in any scheduled activities; however, the specific "Participation" grade will initially come from the score on the Participation Contract at the start of the semester. This may potentially be supplemented by **small** amounts of "bonus" points. Students who do not engage with the Physics content multiple times a week tend lose points on assignments or miss assignments.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified date as listed in the College Calendar on the Student Success web page. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR

Module	TOPIC	READINGS	Start	End
0	General/Persistent Information	Bb Module 0 Folder	Mo, 01/19	Su, 01/25
1	Introduction, Kinematics	CH1, CH2	Mo, 01/19	Su, 01/25
	2-D Kinematics, Dynamics	CH3, CH4	Mo, 01/26	Su, 02/01
	Applications of Newton's Laws	CH5	Mo, 02/02	Su, 02/08
2	Circular Motion, Work, Energy	CH6, CH7	Mo, 02/09	Su, 02/15
	Momentum, Statics, Torque	CH8, CH9	Mo, 02/16	Su, 03/22
	Rotational Kinematics	CH10	Mo, 02/23	Su, 03/01
3	Fluid Statics, Fluid Dynamics	CH11, CH12	Mo, 03/02	Su, 03/08
	Temperature, Gas Laws, Kinetic Theory	CH13	Mo, 03/16	Su, 03/22
	Heat Transfer, Phase Change	CH14	Mo, 03/23	Su, 03/29
4	Oscillations, Waves, Sound	CH16, CH17	Mo, 03/30	Su, 04/05
	Electric Charge, Ohm's Law	CH18, CH20	Mo, 04/06	Su, 04/12
	Circuits, Magnetism, Induction	CH21, CH22, CH23	Mo, 04/13	Su, 04/19
5	Electromagnetic Waves, Relativity	CH24, CH28	Mo, 04/20	Su, 04/26
	Quantum Physics, Atomic Physics	CH29, CH30	Mo, 04/27	Su, 05/03
	Radioactivity, Nuclear Physics	CH31	Mo, 05/04	Su, 05/10

Note: These are the intended dates students should be reviewing the indicated materials.
A FULL Graded Assignment Calendar will be shared at the end of this document.

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

1. Participation	10%
2. Question Analysis (5)	15%
3. Module Tests (3)	15%
4. MANDATORY Midterm Exam	20%
5. Group Project Submissions (5)	20%
6. MANDATORY Final Exam	20%

Note: The Graded Assignment Calendar at the end of this document itemizes the categories.

GRADE SCALE

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

TECHNICAL REQUIREMENTS

For the latest technical requirements, including hardware, compatible browsers, operating systems, etc., review the Minimum Computer and Equipment Requirements on the LIT Online Experience page. 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. 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. 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. Students should typically expect typed communication responses within two business days.
2. Safety and etiquette must always be observed in any physical or digital environment.
3. Any student who breaks safety rules and/or does not conduct themselves properly in any situation can be removed from class to ensure the safety and comfort of others.
4. 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.
5. 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.
6. 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.
7. Expected weekly preparation includes working through the relevant Textbook Chapters, simulations/software, shared video content, and/or Question Lists.
8. Each Module has multiple electronic assignments due as indicated in the Course Calendar in this Syllabus. The due dates are set and visible in multiple locations in Blackboard and are not flexible.
9. ASSIGNMENTS GENERALLY CANNOT BE EXTENDED INDIVIDUALLY.
10. To clarify, the Tests, Exams, and Project Submissions, cannot be late for any reason. Missing any of these can cause students to drop multiple Final Letter Grades.
11. Course material is "recycled" throughout the semester, and Activities [EXCLUDING Tests/Exams] provide "hints" for future Assessments. It is a VERY bad idea to discard any of this information.
12. Students are NOT permitted to maintain or share physical and/or digital copies of any resources, scratch work, materials, or any other content directly present on any Tests/Exams.
13. Respondus Lockdown Browser [with Monitoring] will be required for ALL Tests/Exams.
14. Module 0 in Blackboard will hold this document and a number of other resource documents.
15. Additional instructions and expectations will be communicated through Blackboard and/or email.
16. Students will be notified by Announcement and/or Email if any policies or dates change.

GRADED ASSIGNMENT CALENDAR

Module	Assignment [Course Weight %]	Start	End
0	Lab Participation Contract [10%]	Monday, 01/19	Friday, 01/23
1	Lab Group Project Part A [4%]	Friday, 01/23	Monday, 02/02
	Lab Questions Analysis 1 [3%]	Friday, 01/23	Thursday, 02/05
	Lab Module 1 Test [5%]	Friday, 02/06	Tuesday, 02/10
2	Lab Group Project Part B [4%]	Friday, 02/13	Monday, 02/23
	Lab Questions Analysis 2 [3%]	Friday, 02/13	Thursday, 02/26
	Lab Module 2 Test [5%]	Friday, 02/27	Tuesday, 03/03
3	Lab Group Project Part C [4%]	Friday, 03/06	Monday, 03/23
	Lab Questions Analysis 3 [3%]	Friday, 03/06	Thursday, 03/26
	MANDATORY Lab Midterm Exam [20%]	Friday, 03/27	Tuesday, 03/31
4	Lab Group Project Part D [4%]	Friday, 04/03	Monday, 04/13
	Lab Questions Analysis 4 [3%]	Friday, 04/03	Thursday, 04/16
	Lab Module 4 Test [5%]	Friday, 04/17	Tuesday, 04/21
5	Lab Group Project Part E [4%]	Friday, 04/24	Monday, 05/04
	Lab Questions Analysis 5 [3%]	Friday, 04/24	Thursday, 05/07
	MANDATORY Lab Final Exam [20%]	Friday, 05/08	Tuesday, 05/12

Note: Subject to change. Changes would be communicated through Blackboard and/or Email.