

## **Midland College Syllabus**

2021 - 2022

PHYS 1401 L

College Physics I Lab

4 Semester Credit Hours

(3 Lecture/4 Lab)

*Core Curriculum Course*

### **Instructor Information:**

**Instructor:** [Click here to enter text.](#)

**Phone:** [Click here to enter text.](#)

**Office Hours:** [Click here to enter text.](#)

**Office:** [Click here to enter text.](#)

**Email:** [Click here to enter text.](#)

**Notice:** Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity may be reported as never attended and dropped from the course.

### **Course Description:**

This laboratory-based course accompanies, College Physics I. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; emphasis will be on problem solving. Prerequisite: Math 1316 or Math 2412.

### **Core Objectives:**

This course fulfills four hours of the Life and Physical Science requirement in the Midland College **Core Curriculum**. The Core Curriculum is a set of courses that provide students with a foundation of knowledge, skills and educational experiences that are essential for all learning. The URL for the Core Curriculum is available in the [Midland College Catalog](#). As part of the core, this course addresses the following four objectives:

Critical Thinking Skills – Students will demonstrate critical thinking skills by analyzing problems and applying the principles and concepts listed in the learning outcomes. They will do this in course assignments and exams including a departmental final exam.

Communication Skills – Students will demonstrate communication skills in written, oral, and visual form within the classroom setting through instructor posed questions, collaborative peer assignments, exams and individual and group lab reports.

Empirical and Quantitative Skills – Students will demonstrate empirical and quantitative skills by analyzing problems and applying the principles and concepts listed in the learning outcomes. They will do this in course assignments and exams including a departmental final exam. They will perform at least one lab in each of the areas listed in the first 11 learning outcomes.

Teamwork – Students will demonstrate their ability to perform in teams during the laboratories as they work effectively to perform experiments, manipulate equipment, take and record data, and analyze that data toward drawing conclusions relevant to the subject of each lab. They will perform at least one lab in each of the areas listed in the first 11 learning outcomes performing these labs in small groups of two, three or four members.

### **Text, References and Supplies:**

- Lecture Textbook: Knight, Jones, & Field. College Physics: A Strategic Approach 3<sup>rd</sup> ed., Pearson
  - ISBN: 978-0-13-414332-3

Laboratory Textbook: No purchased book.

### **Student Learning Outcomes**

Upon successful completion of this course, students will:

1. Demonstrate techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
2. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
3. Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration.
4. Apply Newton's laws to physical problems including gravity.
5. Solve problems using principles of energy.
6. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
7. Use principles of impulse and linear momentum to solve problems.
8. Solve problems in rotational kinematics and dynamics, including the determination of the
9. location of the center of mass and center of rotation for rigid bodies in motion.
10. Solve problems involving rotational and linear motion.
11. Demonstrate an understanding of equilibrium, including the different types of equilibrium.
12. Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.
13. Solve problems using the principles of heat and thermodynamics.
14. Solve basic fluid mechanics problems.

### **Student Contributions, Responsibilities and Class Policies:**

Students will be expected to comply with the policies outlined in the [Midland College Catalog](#). Instructor policies concerning attendance and academic behavior are consistent with the policies in the catalog. Regular attendance is required to do well in this class.

Students will be evaluated based on the results of assessments outlined in the syllabus and Instructor Handout.

### **Attendance Policy:**

It is the responsibility of the students to know the policies and procedures associated with absences. These policies are set by instructors. Excused absences may include, but are not limited to, illness, severe weather, and death in the family. Instructors will determine whether or not an absence is excused. Please visit the [Midland College Catalog](#)

### **Withdrawal Policy:**

Students who have enrolled in a Texas public institution of higher education as a first-time freshman in fall 2007 or later are permitted to drop no more than six courses during the entire undergraduate career. This limit includes all transfer work taken at a Texas institution of higher education and to second baccalaureate degrees. This statute was enacted by the State of Texas in spring 2007 (Texas Education Code 51.907). Any course that a student drops after Census Day is counted toward the six-course limit if "(1) the student was able to drop the course without receiving a grade or incurring an academic penalty; (2) the student's transcript indicates or will indicate that the student was enrolled in the course; and (3) the student is not dropping the course in order to withdraw from the institution." Please visit the [Midland College Catalog](#)

### **Scholastic Dishonesty:**

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the Student Rights & Responsibilities section in the [Midland College Catalog](#) for more information.

### **Evaluation of Students:**

The course grade will be determined as follows:

Assessments	Percentage of Grade	Grade Range
Lab Reports	90%	90-100 A
Participation	10%	80-89 B 70-79 C 60-69 D 0-59 F

Students will be evaluated based on the results of examinations given throughout the semester. Your lecture instructor will inform you on the first day of class as to the tentative dates and content for each exam. Students are expected to complete

each exam. Your instructor will inform you on the first day of class as to make-up procedures for missed exams and any exemption procedures if they apply (See Instructor Handout).

**Course Schedule:**

This class meets for 3 lecture hours per week and 4 lab hours per week. For a tentative schedule of the class meetings and material to be covered during those meetings, please refer to the schedule distributed to each student on the first class meeting (See Instructor Handout).

**ADA Statement:**

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must place documentation on file with the Counselor/Disability Specialist. Students with disabilities should notify Midland College prior to the beginning of each semester. More information can be found at the [Midland College Catalog](#), or by contacting the Midland College Disability Specialist at 685-4505.

Student Services will provide each student with a letter outlining any reasonable accommodations. The student must present the letter to the instructor at the beginning of the semester.

**Non-Discrimination Statement:**

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individuals have been designated to handle inquiries regarding the non-discrimination policies:

**Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781, [tbaker@midland.edu](mailto:tbaker@midland.edu);**

**Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534, [nmorgan@midland.edu](mailto:nmorgan@midland.edu).**

For further information on notice of non-discrimination, visit

**[421-3481midcrobcop01.ed.gov/CFAPPS/OCR/contactus.cfm](http://421-3481midcrobcop01.ed.gov/CFAPPS/OCR/contactus.cfm)** or call **1 (800)**

**Spanish**

Midland College no discrimina por motivos de raza, color, nacionalidad, sexo, discapacidad, o edad en sus programas o actividades. Las siguientes personas han sido designadas para responder a cualquier pregunta o duda sobre estas políticas no discriminatorias:

**Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 242, Midland, TX 79705, (432) 685-4781,**

**[tbaker@midland.edu](mailto:tbaker@midland.edu); Natasha Morgan, Director Human Resources/Payroll, 3600 N. Garfield, PAD 104, Midland, TX 79705, (432) 685-4534,**

**[nmorgan@midland.edu](mailto:nmorgan@midland.edu).** Para más información sobre estas políticas no discriminatorias , visite

<http://wdcrobcop01.ed.gov/CFAPPS/OCR/contactus.cfm> o llame al 1 (800) 421-3481.

**Math & Science Division Information:**

Division Office: AHSF 124 (432) 685-4561  
Division E-Mail: [mns@midland.edu](mailto:mns@midland.edu)

Department Chair: Dr. Brian Flowers (432) 685-4586  
Dean: Dr. Miranda Poage  
Secretary: Sarah Anderson  
Clerk: Sandra Thompson

**Contents**

Midland College Syllabus.....	1
Instructor Information: .....	1
Instructor: .....	1
Phone: .....	1
Office Hours: .....	1
Notice .....	1
Course Description:.....	1
Core Objectives: .....	1
Critical Thinking Skills.....	1
Communication Skills.....	1
Empirical and Quantitative Skills.....	2
Teamwork.....	2
Text, References and Supplies: .....	2
Student Learning Outcomes .....	2
Student Contributions, Responsibilities and Class Policies: .....	3
Attendance Policy: .....	3
Withdrawal Policy: .....	3
Scholastic Dishonesty: .....	3
Evaluation of Students: .....	3
Course Schedule:.....	4
ADA Statement: .....	4
Math/Science Division Information: .....	5