

## **Midland College Syllabus**

2023 - 2022

PHYS 1402 L

College Physics II 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 the lecture for College Physics II. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Prerequisite: Physics 1401.

### **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 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. They will perform at least one lab related to each subject area listed in the first eight learning outcomes.

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 eight 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 eight 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. Develop techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
2. Demonstrate the collections, analysis, and reporting of data using the scientific method.
3. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
4. Solve problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.
5. Apply Kirchhoff's Rules to analysis of circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.
6. Solve problems in the electrostatic interaction of point charges through the application of Coulomb's Law.
7. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents which produce them.
8. Use Faraday's and Lenz's laws to determine electromotive forces and solve problems involving electromagnetic induction.
9. Solve problems applying the principles of reflection, refraction, diffraction, interference, and superposition of waves.
10. Solve practical problems involving optics, lenses, mirrors, and optical instruments.

**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).

**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 individual has been designated to handle inquiries regarding the non-discrimination policies:

**Tana Baker**

Title IX Coordinator/Compliance Officer

3600 N. Garfield, SSC 131

Midland, Texas 79705

(432) 685-4781

[tbaker@midland.edu](mailto:tbaker@midland.edu)

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

**Americans with Disabilities Act (ADA) Statement:**

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit [www.midland.edu/accommodation](http://www.midland.edu/accommodation) and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

### **Continuity of Instruction Statement:**

In the event that on campus activities are suspended due to extenuating circumstances, such as weather or quarantine, the instructor will continue instruction in a manner that best supports the course content and student engagement. In this event, your instructor will notify students of the change via [Click here to enter text](#). At that time, they will provide details about how instruction and communication will continue, how academic integrity will be ensured, and what students may expect during the time that on campus activities are suspended. If a student becomes unable to continue class participation due to extenuating circumstances, (e.g., health and safety, loss of power, etc.) the student should contact their instructor and advisor for guidance. Resources are available to students via the SOS program. Information can be found at <https://www.midland.edu/services-resources/student-services/sos.php>.

### **Grievances or complaints:**

Concerns should be expressed as soon as possible to allow for early resolution. Midland College encourages students to discuss their concerns with their instructor first. If you feel uncomfortable discussing your situation with your instructor, students should discuss their concerns with the Chair of the appropriate department (Biology Chair – Mr. Tomas Hernandez (432-685-6751), Chemistry Chair – Mr. John Anderson (432-685-6737), Engineering and Physics Chair – Dr. Brian Flowers (432-685-4586), Geology Chair – Mr. Antony Giles (432-685-5580), Kinesiology Chair – Ms. Sheena Thompson (432-685-4579), Math Chair – Dr. Krista Cohlma (432-685-4541) then the Dean of Math and Science – Dr. Miranda Poage (432-685-4561). If a resolution is still not possible, students may proceed with the formal complaint process.

<http://catalog.midland.edu/content.php?catoid=14&navoid=2579#grievances-and-complaints>

### **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: Liliana Orcutt

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