



AP Physics C Instructional Plan:

Course Overview

This year-long, calculus-based sequence is an introductory college-level physics program designed to develop a deep conceptual and mathematical understanding of the core principles of physics. Students will complete two distinct courses: AP Physics C: Mechanics in the fall semester and AP Physics C: Electricity and Magnetism in the spring semester.

In Mechanics, students explore motion and forces through topics including kinematics, Newton's laws, work and energy, linear and angular momentum, rotational dynamics, oscillations, gravitation, and fluids. In Electricity and Magnetism, students study electrostatics, conductors, capacitors, dielectrics, electric circuits, magnetic fields, and electromagnetism. In both courses, calculus is applied extensively for derivations, modeling, and problem analysis.

The program emphasizes both conceptual understanding and the analytical skills needed for success on the AP Physics C: Mechanics and AP Physics C: Electricity and Magnetism Exams, as well as in future STEM coursework. Students engage in hands-on, inquiry-based laboratory work, experimental design, data analysis, and theoretical modeling, applying physical principles to real-world systems and engineering contexts.

Contact Information

Teacher Name: Margaret Kendrick

Email: margaret.kendrick@midlandisd.net

Phone:

Classroom Expectations

The classroom is a respectful, safe, and collaborative learning environment where students are expected to be prepared, participate actively, and respect others. The goal is academic success and personal growth for all.

Core Expectations

1. **Be Prepared** – Bring required supplies, attend regularly, and be ready to learn.
2. **Participate & Take Responsibility** – Complete assignments on time, engage in discussions, and contribute to learning.
3. **Respect the Learning Environment** – Follow behavior guidelines and report problems appropriately.

Behavior & Consequences

Positive reinforcement and routines support success. If expectations aren't met, the process is: reteach → redirect → parent contact → office referral. Students are expected to act with maturity and respect, as if preparing for college.

Materials

3 ring binder, Loose-leaf paper, pencils/pens, Chromebook, and composition lab notebooks

Assignments & Schedule

Six-week calendars outline assignments, though dates may change. Students must check posted or online updates.



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Tutoring

Available mornings, during lunch, and afternoons on specified days. Exact dates will be posted on Class Dojo and Google Classroom. Students are responsible for seeking help when needed.

Attendance Policy & Its Importance

Regular attendance is essential for success in AP Physics. This course builds critical problem-solving skills, scientific reasoning, and laboratory experience that cannot be replicated through make-up work alone. Physics concepts build on one another, and frequent absences can create gaps that are difficult to close. MidlandISD grading policy will be followed for late work.

Learning Objectives

By the end of the first semester, students will be able to:

- Engage with the physics content through the three Science Practices:
 1. **Creating Representations** – drawing diagrams, graphs, and models to represent physical phenomena;
 2. **Mathematical Routines** – conducting calculations, deriving symbolic expressions, making estimates, and predicting changes;
 3. **Scientific Questioning and Argumentation** – designing experiments, analyzing data, and using evidence and principles to support claims
- Master eight core content units
- Develop proficiency across “Big Ideas” that span the entire curriculum
 1. **Systems** – analyzing characteristics of physical systems
 2. **Fields** – understanding how interactions can be described using fields.
 3. **Force Interactions** – analyzing forces and their effects.
 4. **Change** – investigating how interactions cause change.
 5. **Conservation** – recognizing that interactions are governed by conservation laws
- **Apply scientific practices consistently**, including modeling, data analysis, argumentation, and connecting concepts across various contexts
- **Dedicate at least 25% of instructional time to laboratory investigations**, reinforcing content through experimental design, data collection, and evidence-based reasoning

Semester 1 (Mechanics)	Semester 2 (Electricity and Magnetism)
Unit 1: Kinematics Unit 2: Force and Translational Dynamics Unit 3: Work, Energy, and Power Unit 4: Linear Momentum Unit 5: Torque and Rotational Dynamics Unit 6: Energy and Momentum of Rotating Systems Unit 7: Oscillations	Unit 8: Electric Charges, Fields, and Gauss’s Law Unit 9: Electric Potential Unit 10: Conductors and Capacitors Unit 11: Electric Circuits Unit 12: Magnetic Fields and Electromagnetism Unit 13: Electromagnetic Induction

Course Resources

- Chromebook (provided by Midland ISD)
- MISD-provided instructional materials (Course approved textbooks, etc.)
- AP Classroom and AP instructional Materials
- Online resources such as physicsclassroom, Phet Labs, etc.



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Grading Policy

Major assignments - 60% Minor assignments - 40%
Semester exams count as 15% toward the final semester grade

According to Midland ISD Grading Policy:

The summative evaluation of a student's grade during a recording period should be based on sufficient data collected in class in the form of various assessments. Regular and periodic assessment of student progress ensures a student has ample time for remediation.

Students must receive feedback on every graded assignment within three to seven days. Major assignments will receive feedback within ten days. Teachers will, at a minimum, communicate with students and their guardians every ten school days regarding upcoming assessments, classroom reminders, learning topics covered in class, and/or expectations. Regular communication may be electronic through the adopted Student Information System or other messaging applications. Teachers will maintain a parent communication log during each grading cycle.

Please feel free to reach out with any questions or concerns. We are excited to work together to make this a successful year of learning!

Please fill out the portion below and return this portion to your teacher.

We acknowledge that we have read and that we understand the expectations of 11th Grade US History. We agree to contact the teacher should we have any questions or concerns regarding this instructional plan.

Parent Name: _____

Student Name: _____

Cell Phone Number: _____

E-Mail: _____

Parent Signature : _____

Student Signature: _____

Date: _____