

# FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



## AP Physics 2

<b>Board Approval Date: May 16, 2024</b>	<b>Course Length: 2 Semesters</b>
<b>Grading: A-F</b>	<b>Credits: 5 Credits per Semester</b>
<b>Proposed Grade Level(s): 11, 12</b>	<b>Subject Area: Physical Science Elective Area (if applicable):</b>
<b>Prerequisite(s): AP Physics 1, Pre-Calculus concurrent or completed Highly Recommended: Chemistry of Honors Chemistry</b>	<b>Corequisite(s): None</b>
<b>CTE Sector/Pathway:</b>	
<b>Intent to Pursue 'A-G' College Prep Status: Yes</b>	
<b>A-G Course Identifier: (d) Laboratory Science</b>	
<b>Graduation Requirement: No</b>	
<b>Course Intent: District Course Program (if applicable): AP</b>	
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## COURSE DESCRIPTION:

AP Physics 2 is an algebra-based, introductory college-level physics course. This course is useful for potential engineering, pre-med, science, and computer science majors, as well as anyone interested in physics. The course covers thermodynamics; electrical force, field, and potential; electric circuits; magnetism and electromagnetic induction; geometric and physical optics; and quantum, atomic and nuclear physics. This course will prepare the student to take the Advanced Placement Examination for Physics 2. This course meets UC/CSU (Laboratory Science-d) requirements. AP Physics allows time for thorough, in-depth, student-centered inquiry activities allowing students to carry out careful experiments and design laboratory practical work to answer real world questions.

## DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
<b>1. Thermodynamics</b>	How is the temperature of a substance related to the energy and movement of its atoms and molecules? How does probability help explain entropy?	*Labs *AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *Lab questions	*Quizzes *Labs *Exams
<b>2. Electric Force, Field, and Potential</b>	How do electrical charges behave in an electric field? What parallels can be drawn between electric charge and energy?	*Labs *AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *Lab questions	*Quizzes *Labs *Exams
<b>3. Electric Circuits</b>	How does the resistance and capacitance of resistors and capacitors change in response to changes in the physical geometry of the circuit element?	*Labs *AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *Lab questions	*Quizzes *Labs *Exams
<b>4. Magnetism and Electromagnetic Induction</b>	Why does a relationship exist between electrical currents and magnetic fields? To what extent can you predict interactions in	*Labs *AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets	*Quizzes *Labs *Exams

	magnetic fields?	*Lab questions	
<b>5. Geometric and Physical Optics</b>	How can electromagnetic waves be modeled?	*Labs *AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *Lab questions	*Quizzes *Labs *Exams
<b>6. Quantum, Atomic, and Nuclear Physics</b>	How does the photoelectric effect support the idea of wave/particle duality? How can nucleon numbers be conserved when there are so many ways for an atom to split and decay?	*Labs *AP Classroom Progress *Checks *Quizzes *Problem Sets *Worksheets *Lab questions	*Quizzes *Labs *Exams

**ESSENTIAL STANDARDS:**

<https://apcentral.collegeboard.org/media/pdf/ap-physics-2-course-and-exam-description.pdf>

**RELEVANT STANDARDS AND FRAMEWORKS, CONTENT/PROGRAM SPECIFIC STANDARDS:**

**Link to Common Core Standards (if applicable):**

Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school.

<https://www.cde.ca.gov/pd/ca/sc/documents/ngsshspysicalscidci.pdf>

**Link to Framework (if applicable):**

Curriculum frameworks provide guidance for implementing the content standards adopted by the State Board of Education (SBE). Frameworks are developed by the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission, which also reviews and recommends textbooks and other instructional materials to be adopted by the SBE.

<https://www.cde.ca.gov/pd/ca/sc/documents/ngsshspysicalscidci.pdf>

**Link to Subject Area Content Standards (if applicable):**

Content standards were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level.

<https://apcentral.collegeboard.org/media/pdf/ap-physics-2-course-and-exam-description.pdf>

**Link to Program Content Area Standards (if applicable):**

Program Content Area Standards apply to programs such as International Baccalaureate, Advanced Placement, Career and Technical Education, etc.

<https://apcentral.collegeboard.org/media/pdf/ap-physics-2-course-and-exam-description.pdf>

**TEXTBOOKS AND RESOURCE MATERIALS:**

**Textbooks**

<b>Board Approved</b>	<b>Pilot Completion Date (If applicable)</b>	<b>Textbook Title</b>	<b>Author(s)</b>	<b>Publisher</b>	<b>Edition</b>	<b>Date</b>
<i>Yes</i>		<i>College Physics for the AP<sup>®</sup> Physics 1 &amp; 2 Courses</i>	Stewart	Bedford, Freeman, and Worth	3rd	<i>1/1/2023</i>