

# SCIENCE

## COURSES OFFERED

No.	Course Title	Credit
205	Physical Science	1.00
215	Biology	1.00
236	Chemistry	1.00
213	Systems of the Earth	1.00
242	Physics	1.00
217	Advanced Placement Biology	1.00*
2175	Advanced Placement Biology Lab	1.00*
238	Advanced Placement Chemistry	1.00*
2385	Advanced Placement Chemistry Lab	1.00*
239	Advanced Placement Environmental Science	1.00
244	Advanced Placement Physics B	1.00*
2445	Advanced Placement Physics B Lab	1.00*
245	Advanced Placement Physics C	1.00
2455	Advanced Placement Physics C Lab	1.00

### IMPORTANT SCHEDULING INFORMATION:

- Science Sequence **options** and **teacher approval** for grades 10-12 will take place on Advisement Days prior to scheduling.
- More than **one** science course can be taken any year.
- **Three** science credits are required for graduation from high school, one must be a Biology.

### Science Options for Students

Grade	Option #1	Option #2	Option #3
Summer School			Physical Science
9	Physical Science	Physical Science and Biology	Biology
10	Biology	Any Course	Any Course
11-12	Any Course	Any Course	Any Course

### Option #4 Focused Acceleration

#### Criteria for Applying for Acceleration:

- Teacher Recommendation
- 8<sup>th</sup> Grade First Semester Grades: A/A-
- Minimum GPA: 3.6
- Science and/or Math Test Scores: 95<sup>th</sup> Percentile or Explore Test
  - Acceleration into Biology – Science Score Used
  - Acceleration into Chemistry, Physics, Systems of the Earth or AP Courses – Science and Math Scores Used
- Student Motives Essay

See Guidance Counselor for more information. All applications must be submitted by **March 1, 2007**.

## **PHYSICAL SCIENCE- 205**

Core  
Graded: Conventionally Credit: 1.00  
Time Frame: Year

Physical Science is a one-year course in which students participate in hands-on explorations in the fields of chemistry and physics. Topics of interest include the physics of sports, astronomy, thermodynamics, sound, and light. Energy transformations, chemistry of the periodic table, and the conservation principles would also be covered in this course. Physical Science is an activity driven course with an inquiry approach that provides both a meaningful and relevant explanation of the physical world. Credit for the course may be counted toward the requirements for college articulation. This course provides excellent preparation for the student who expects to take biology, chemistry, and/or physics in high school.

## **SYSTEMS OF THE EARTH - 213**

Highly Recommended: Physical Science and Biology  
Elective  
Graded: Conventionally Credit: 1.00  
Time Frame: Year

Systems of the Earth is a one-year course in which students study the interactions among Earth's subsystems of water, air, land, atmosphere, and all the living components. Students investigate the similarities among Earth and the other planets, the unique position and characteristics of Earth in the solar system, processes that have shaped and continue to impact planet and environmental issues. This course integrates biology, chemistry, physics, and Earth science to characterize the picture of life on this planet. Systems of the Earth is a laboratory science course that meets the requirements for college articulation.

## **BIOLOGY - 215**

Highly Recommended: Physical Science  
Core  
Graded: Conventionally Credit: 1.00  
Time Frame: Year

Biology is a one-year course in which students study the living world in a laboratory and classroom setting. Methods of instruction include data analysis, research, laboratory work, computer simulation, and the application of biology to daily life.

## **ADVANCED PLACEMENT BIOLOGY - 217 and 2175 Lab**

Highly Recommended: Biology and Chemistry  
Elective  
Grade: Weighted Credit: 2.00  
Time Frame: Year (1.00 weighted;  
1.00 S/U)

Advanced Placement Biology parallels a college-level introductory biology course for science majors. It is a one-year course that includes laboratory work, college-level reading, essay writing, and class discussions. It is intended for the student who wishes to obtain a strong background in biology and who intends to take the Advanced Placement Biology examination at the end of the year for possible college credit. Topics of study include: molecular and cellular biology, biochemical concepts, evolution, organismal biology, and population biology. AP Biology is a double-period class.

## **CHEMISTRY - 236**

Highly Recommended: Physical Science and Biology  
Elective  
Graded: Conventionally Credit: 1.00  
Time Frame: Year

Chemistry is a one-year course developed in conjunction with the National Science Foundation and the American Chemical Society. Its laboratory activities introduce and develop important chemical concepts within the context of societal issues, such as: water, material structure and use, petroleum, and the chemistry of air and the atmosphere, commercial/industrial chemistry, and biochemistry. Students will use and apply their chemistry learning in decision-making activities. Critical thinking is emphasized. This course meets college requirements for science credits and is an effective first course in chemistry for all students.

## **ADVANCED PLACEMENT CHEMISTRY - 238 and 2385 Lab**

Highly Recommended: Chemistry  
Elective  
Grade: Weighted Credit: 2.00  
Time Frame: Year (1.00 weighted;  
1.0 S/U)

Advanced Placement Chemistry parallels a college-level introductory chemistry course for science majors. It is a one-year course intended to prepare students to take the AP Chemistry examination at the end of the year for possible college credit. Students will study the laws and principles of chemistry. The course includes laboratory work, lecture, outside reading, class discussions, and extensive problem solving. It is intended for the serious student who wishes to obtain a strong background in chemistry. Topics of study include the following: chemical nomenclature, quantum mechanics, atomic structure, periodicity, states of matter, thermodynamics, equilibrium, acids-bases-salts, electrochemistry, kinetics, solution chemistry, nuclear chemistry, organic chemistry, and biochemistry. AP Chemistry is a double-period class.

## **ADVANCED PLACEMENT ENVIRONMENTAL SCIENCE - 239**

Highly Recommended: Chemistry  
Elective  
Grade: Weighted Credit: 1.00  
Time Frame: Year

The AP Environmental Science Course is designed to be the equivalent of a one-semester, introductory college course in environmental science. The course is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving and/or preventing them.

## **PHYSICS - 242**

Highly Recommended: Physical Science and Biology

Elective

Graded: Conventionally Credit: 1.00

Time Frame: Year

Physics is a one-year course in which students study the laws and principles of physics through the use of inquiry, laboratory work, computer simulations and experiments, reading, problem solving, and project work. Topics of study include the following: forces, motion, light, wave properties, optics, sound, electricity, and magnetism. Students will also recognize that discoveries in physics and technology influence our world.

## **ADVANCED PLACEMENT PHYSICS B- 244 and 2445 Lab**

Highly Recommended: Physics

Elective

Grade: 11-12

Grade: Weighted

Credit: 2.00

Time Frame: Year

(1.00 weighted;  
1.0 S/U)

Advanced Placement Physics B parallels a college-level introductory physics course for science majors. It is a one-year course intended to prepare students to take the AP Physics B examination at the end of the year for possible college credit. Students will study the laws and principles of physics. The course includes laboratory work, lecture, outside reading, class discussions, and extensive problem solving. It is intended for the student who wishes to obtain a strong background in physics. Topics of study include the following: motion, classical mechanics, kinetic theory, thermodynamics, electricity, magnetism, waves, optics, quantum physics, and special relativity. AP Physics B is a double-period class.

## **ADVANCED PLACEMENT PHYSICS C**

Highly Recommended: Precalculus with current or past enrollment in  
Calculus

Elective

Grade: Weighted

Credit: 2.00

Time Frame: Year

The AP Physics C course is designed to be the equivalent of a yearlong, introductory college course in physics intended primarily for engineering, physics, or physical science majors. This course is to provide students with the scientific principles, concepts, and methodologies required to understand the physical world in terms of major concepts and mathematical models. These mathematical models may include basic concepts of calculus.