

## **SUMMARY**

The District's Educational Services Department has recommended updates in our district-wide course catalog. When a course is discovered to be out of date, or changes have been made by curriculum programs, the department team is requested to work together to bring the course of study current. The Science teachers revised these courses to align with the new Science textbook adoption and the Next Generation Science Standards (NGSS) to best support our students. These courses all meet the UC/CSU requirement of "D."

Science 9 teaches students the basic principles of Physics and Earth/Space Science through experimentation and engineering practices designed for introductory-level conceptual physics. Classic science principles of forces, motion, waves, and energy conservation will be explored through both Earth and Space science phenomena, as well as classical and modern physics principles. Students will continue to develop their skills of reading, writing, discussion, and analysis through laboratory work, investigations, and group projects. There will be a strong emphasis on investigations and engineering solutions to both problems in the class and problems in the larger world. This course builds a foundation of basic physics concepts that are fundamental for understanding science and covers NGSS Performance Expectations from the domains of Physical Science, Earth/Space Science, Engineering, Technology, and Applications of Science. This course is intended for ninth-grade students.

Biology is a year-long high school course that engages students in studying life and living organisms and examines biology and biochemistry in the real world. The course encompasses traditional concepts in biology and encourages the exploration of discoveries in the field. The components include biochemistry, cell biology, cell processes, heredity and reproduction, the evolution of life, taxonomy, human body systems, and ecology. This course will introduce biological science as a process of examining organisms and life processes, the chemistry of life, cells and their functions in organisms, DNA and genetics, evolution of life on Earth, and ecology. This course is aligned with the Next Generation Science Standards, which were developed by states to improve science education for all students. These standards aim to develop a thorough understanding of content and improve key skills like communication, collaboration, inquiry, problem-solving, and creative thinking. This course is intended for all high school students.

Chemistry is designed to give students a basic understanding of chemical principles. Upon completing this course, students should have the skills and content necessary to succeed in college-level science courses. Major topics covered are atomic structure, bonding, reactions, states of matter, and solutions. To foster this deeper level of learning, the breadth of content coverage in chemistry is defined in a way that distinguishes content essential to support the enduring understanding from the many examples or applications that can overburden the course. Illustrative examples are provided that offer you a variety of optional instructional contexts to help your students achieve more profound understanding. Content that is outside the scope of the course is also identified. The Chemistry framework encourages student development of inquiry and reasoning skills, such as designing a plan for collecting data, analyzing data, applying mathematical routines, and

justifying arguments using evidence. The result will be readiness to study advanced topics in a subsequent AP course. This course is intended for all high school students.

Physics is a mathematical and conceptual course that covers Newtonian Mechanics (Kinematics, Dynamics, Forces, Universal Law of Gravitation, Linear Momentum, and the Conservation of Momentum and Energy), Electricity and Magnetism, DC Circuits, Waves and Light, Modern Physics, and Cosmology. This course includes a rigorous laboratory component. This course will introduce students to classical and modern physics. The course will promote critical and mathematical thinking and prepare students for college-level coursework. This course benefits students who hope to pursue science, technology, engineering, and medical fields. This course is intended for all high school students.

AP Biology is an introductory college-level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes, energy and communication, genetics, information transfer, ecology, and interactions. Given the speed with which scientific discoveries and research continuously expand scientific knowledge, many educators face the challenge of balancing the breadth of content coverage with depth of understanding. The AP Biology course outlined in this framework embraces this challenge by deemphasizing a traditional "content coverage" model of instruction in favor of one focusing on enduring, conceptual understandings and the content that supports them. This approach enables students to spend less time on factual recall and more time on inquiry-based learning of essential concepts, helping them develop the reasoning skills necessary to engage in the science practices used throughout their study of AP Biology.

Students will have the opportunity to take the AP Biology exam to receive AP credit on their transcript. A qualifying score of three (3) or better on the AP exam may earn a student college credit.