

# **SCIENCE DEPARTMENT**

## **PREREQUISITES FOR HONORS AND AP SCIENCE CLASSES:**

- Students must meet requirements stated in course descriptions.
- Students must also successfully complete the required summer work assigned when accepted into the program.
- Students must earn a semester grade of “C” or better to remain in the program.
- SEE SECTION REGARDING EXTRA GRADE POINTS AND AP TEST.

## **ANATOMY**

**Prerequisite:** One year of Biology is required; A “B” or better in both semesters of Biology or the Biology teacher’s recommendation.

This yearlong course will cover human anatomy and physiology. There are required dissections, projects and papers that students should expect to participate in. Additionally, students can expect to be tested on class materials with written and oral tests. This course meets high school graduation requirements for one year of life science. It also meets the “d” and “g” University of California lab science requirement.

## **BIOLOGY**

**Prerequisite:** A grade of “C” or better in a Physical Science or recommendation of former teachers. For freshmen this means a recommendation by their 8<sup>th</sup> grade teacher.

This yearlong course is a college preparatory class in Biology. Students will become familiar with scientific process and thinking, characteristics of living things, cell biology, biochemistry, genetics, evolution, the scope of living organisms, and the environment and ecology. This course meets high school graduation requirements for one year of life science. It also meets the “d” and “g” University of California lab science requirements.

## **BIOLOGY (AP)**

**Prerequisite:** A grade of “B” or better in both semesters of Biology, & Chemistry is recommended / not required.

The AP Biology course is designed to be the equivalent of a year-long college introductory biology course. The two main goals of AP Biology are to help students develop a conceptual framework for modern biology and an appreciation of science as a process. This course will cover 8 themes of biology that are applied throughout the curriculum. These include: Science as a Process, Evolution, Energy Transfer, Continuity and Change, Relationship of Structure to Function, Regulation, Interdependence in Nature and Science, Technology, and Society. These themes will be addressed in class lectures, group discussions and laboratory experiments. This class meets high school graduation requirements for life science and “d” or “g” University of California lab science requirement.



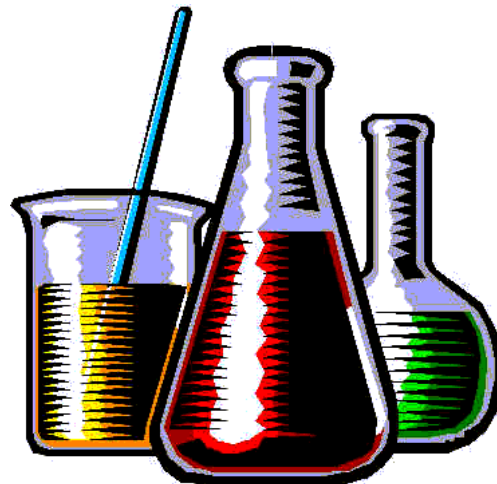
## **BIOLOGY AND COMMUNITY HEALTH (11th & 12th graders)**

This course is a college preparatory laboratory science course aligned with NGSS and integrated with public and community health standards. This course is designed to expand students’ understanding of biological concepts through the study of the effect of disease on public and community health. Students will engage in experiments, conduct research, complete simulations and apply knowledge of cellular physiology to understand the spread of disease. Units will include cell physiology, genetics, evolution and ecology emphasizing how each affect public health. Students will develop extensive medical vocabulary used in health care occupations through the study of root words, prefixes and suffixes. Students will also investigate various local community health careers with guest speakers and field trips and will become CPR certified. This course meets the “d” University of California / California State science requirements.

## **CHEMISTRY**

**Prerequisite:** One year of Biology and Algebra 1 with grades of "C" or better.

This is a course for college bound students. It is a general introductory course, which includes the study of chemical interactions, atomic theory, properties of matter, formation of compounds, thermochemistry, solutions, reaction rates, equilibrium, acids and bases, and practical and theoretical aspects of chemistry. This course meets high school graduation requirements for physical science. It also meets the "d" or "g" University of California lab science requirements.



## **CHEMISTRY (H)**

**Prerequisite:** Completed one year of Biology and Algebra 1 with grades of "B" or better or passed the Algebra Competency Test.

This is a college level introductory course, which includes the study of chemical interactions, atomic theory, properties of matter, formation of compounds, thermo-chemistry, solutions, reaction rates, equilibrium, acids and bases, electrochemistry, and practical and theoretical aspects of chemistry.

## **ENVIRONMENTAL SCIENCE (AP)**

**Prerequisite:** Completion of chemistry and biology with a C or better (both semesters)

This is a course for college bound students. Course topics include: scientific analysis, energy and matter cycles, renewable and non-renewable resources, and human impacts on the environment. Scientific data collection and experiments will be performed on a regular basis. This course will especially benefit students interested in a career in the field of natural resources. This class meets high school graduation requirements for physical science. It also meets the "d" or "g" University of California lab science requirements.

## **INTEGRATED SCIENCE** (A non-college prep course - 11th & 12th graders)

Integrated Science is a non-college prep, hands-on, project based course in physical science. Students will examine topics in physics, chemistry, and earth science through hands on projects. This may include: the study of motion through the construction and analysis of a mouse trap car, trebuchet, or other moving object; study of electricity / electronics by building simple circuits, solar panels, and programming microcontrollers; and the study of thermodynamics through the construction of a model house.

## **PHYSICS (H)**

**Prerequisite:** Completed Geometry and enrolled in Algebra 2 or higher

This course is designed for students who are (1) college preparatory and (2) oriented toward the science/engineering professions. Subject matter includes but is not limited to: mechanics, interactions between energy and matter, sound, light, optics, electricity, magnetism, and nuclear physics. This course satisfies the "d" or "g" University of California lab science requirement.

