

SCIENCE DEPARTMENT – COURSE DESCRIPTIONS

BIOLOGY (COLLEGE BOUND)

(Grades 10-12)

Course Code #822

5 Credits

Prerequisite: CB Physical Science

Biology is for all students. Beginning with a study of Cellular and Molecular Biology, the course logically moves into reproduction, genetics, evolution, and classification. Stress is placed on building a basic structure of biological principles upon which the student will build further concepts and will arrive at sensible conclusions. Classes meet four times a week. (This includes a double period once a week for laboratory work.)

Suggested Sequel: Chemistry

CHEMISTRY (COLLEGE- BOUND)

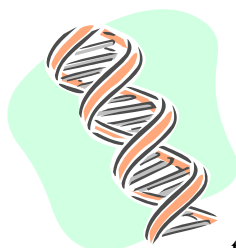
(Grades 10-12)

Course Code #827

5 Credits

Prerequisite: CB Biology and Algebra II (can be taken concurrently)

Chemistry is recommended for all students who wish to pursue an electronic, mathematical, analytical, para-professional (lab technician, LPN) and/or scientific career in college. Basic theoretical chemical principles emphasizing structure of elements will be covered. Energy and related changes during chemical reactions, the mole concept, solubility, equilibrium in reactions, quantum theory, and oxidation and reduction reactions are thoroughly investigated. Much attention is placed on the mathematical aspects of the chemical reactions.



It is recommended that those who wish to pursue this course have already completed Academic Science, Academic Biology, and the first year of Algebra. It is also suggested that Algebra II be taken at the same time as this

course. Classes meet four times a week (including a double period once a week for laboratory work).

Suggested Sequel: Physics or Science Elective

HONORS CHEMISTRY (Grade 10)

Course Code #855

5 Credits

Prerequisite: Honors Physical Science with a B+ average

This course is recommended for gifted and highly motivated students. The course prepares students for the rigors of the Advanced Placement Science program available to students in the 11th and 12th grades. Topics covered are similar to those studied in CB Chemistry but at this level the approach to content is more in-depth and at a more challenging pace. Students **must** be enrolled in Algebra II concurrently with this course.

Suggested Sequel: AP Biology

ENVIRONMENTAL SCIENCE (Grades 10-12)

Course Code #841

5 Credits

Prerequisite: CB Biology

Environmental Science provides a second year in the biological study of nature for those students interested in increasing their understanding of the environment.. Students will develop an understanding of ecological theory and principles and recognize how they apply to the human situation. Classes meet six times a week. (This includes a double period once a week for extensive laboratory field work.)

OCEANOGRAPHY AND MARINE BIOLOGY (Grades 11-12)

Course Code #834

5 Credits

Prerequisite: CB Biology, Algebra I

Oceanography and Marine Biology is a full-year course intended for students interested in the marine environment. Topics include physical and chemical aspects of sea water, ocean currents, marine geology and meteorology, the biological aspects of major marine biomes and, in particular, the local flora and fauna will be intensively investigated. Classes meet four times a week, including a double period of laboratory.

PHYSICS (Grades 11-12)

Course Code #838

5 Credits

Math Prerequisite: B+ or better in Algebra II and/or Geometry, Trigonometry

Chemistry Co-requisite: It is suggested that Pre-Calculus be taken concurrently.

Physics is primarily concerned with the study of the principles and laws governing the behavior of the inanimate world. It covers topics of classical physics, atomic structure and nuclear energy. Classical physics includes mechanics, properties of matter, heat, sound, light, electricity and magnetism. The associated laboratory work stresses discovery rather than confirmation of previously learned information. Classes meet four times a week (including a double period once a week for laboratory work).

AP PHYSICS (Grade 12)

Course Code #843

10 Credits

Prerequisites: Math department recommendation, 93% in High School Physics and/or CB Chemistry

Honors Physics is an accelerated college-level treatment of the topics covered in high school Physics. This course is designed for motivated seniors who wish to pursue a career in engineering, medicine, computer technology or a related field. The laboratory experiences are open-ended, student directed investigations that rely upon analytical thinking skills. **This course will meet every day for two periods.**

MODERN PHYSICAL SCIENCE (Grade 9)

Course Code #811 (CB)

5 Credits

This course is for the 9th grade student.

Students will explore the following Physical Science concepts, which include: matter; mechanical, electrical and heat energy; chemistry; magnetism; and the electromagnetic spectrum. Students will investigate numerous problems and questions while using mathematical problem solving activities to gain added insight into these physical concepts.

HONORS PHYSICAL SCIENCE (Grade 9)

Course Code #853

5 Credits

This course is recommended for the highly-motivated and academically-gifted 9th grader who has a strong interest in Science. The curriculum, while similar to that of CB Physical Science, will also have an emphasis on non-mathematical concepts of Physics and elements of Chemistry. Students taking this course should be taking Honors Geometry concurrently.

Suggested Sequel: Honors Chemistry

ANATOMY AND PHYSIOLOGY

(Grades 11-12)

Course Code #851

5 Credits

Prerequisite: CB Biology

Anatomy and Physiology is a full-year course which provides a closer look at the different vertebrate systems. The comparing and contrasting of the systems between different vertebrate species will be covered through a series of dissections including but not limited to a cat, sheep's kidney, brain, eyes and heart. Anatomy and Physiology is recommended for all students who wish to pursue a career in the sciences, especially the health care professions.

*This course can be taken concurrently with CB Chemistry as an elective

AP BIOLOGY (Grades 11-12)

Course Code #820

10 Credits

Prerequisite: CB Biology, CB Chemistry (B average or better in both courses)

Math Recommendation: Algebra II

AP Biology is an honors-level course for juniors and seniors who wish to pursue careers in the field of biology. The twelve-lab requirement is designed to mirror an introductory college level course. Topics will include biochemistry, ecology, evolution, botany and molecular genetics.

This course will meet every day for two periods.