

SCIENCE

Students enrolled in a strong college preparatory program should take four years of science core courses. This should include:

- 9th grade - Earth Science
- 10th grade - Biology
- 11th grade - Chemistry
- 12th grade - Physics

The science department also offers electives which may be taken in addition to the above courses.

- A. Advanced Placement courses
 - 1. A.P. Biology - recommended for 11th grade.
 - 2. A.P. Chemistry - recommended for 12th grade.
- B. Non-Honors electives
 - 1. Anatomy & Physiology - recommended for 11th or 12th grade.
 - 2. Environmental Science - recommended for 11th or 12th grade.

GENERAL SCIENCE

10 1 credit 2 semesters (full year) B \$10.00

(Prerequisite: Completion of Basic Earth Science and teacher recommendation)

This course includes fundamentals of science for students who do not intend to attend a college or university. The course includes a brief description of the metric system and leads into the general use of the microscope. It continues with a look at the cell as it develops into tissue, organs and systems. It concludes with a survey of biomes, ecology, and the environment.

BIOLOGICAL SURVEY

10-11 1 credit 2 semesters (full year) G \$15.00

(Prerequisite: Completion of General Earth Science and teacher recommendation)

This course discusses concepts related to ecology, environmental/social issues and a survey of the organisms that surround us in the world. This class is designed to create scientifically literate students who will be successful on state tests.

BIOLOGY I

10 1 credit 2 semesters (full year) CP \$45.00

(Prerequisite: 80% average or higher in College Prep Earth Science, or completion of Advanced Earth Science)

This rigorous college-preparatory course begins with an introduction to the techniques of scientific investigation. It continues with study of the cell, its structure and related biochemistry, continuity of life, the hereditary structures, cell division, and genetic patterns. This course also discusses concepts related to ecology, environmental issues, and a survey of the organisms that surround us in the world.

SCIENCE EXPLORATION

11-12 .5 credit 2 semesters (full year) B \$20.00

(Prerequisite: Students still needing to pass the 10th grade Ohio Graduation Test.)

This course is designed to provide intervention for those students needing to pass the Ohio Graduation Test. Students will concentrate on the 6 science standards from the 10th grade Ohio Graduation Test. Topics include life sciences, physical sciences, earth and space sciences, scientific ways of knowing, scientific inquiry, and science and technology.

ADVANCED PLACEMENT BIOLOGY

11-12 1 credit 2 semesters (full year) AP/H \$85.00

(Prerequisite: Biology I with 93% average or higher, teacher recommendation, and current enrollment in or successful completion of Chem. I)

This honors course is for the serious biology student who wants the opportunity to earn college credit. It covers exploration into molecular and cellular organization, energy in living systems, Mendelian principles of heredity, genetic engineering, origin and diversity of life, human anatomy and physiology, and ecology. A vertebrate dissection is mandatory. The final is comprehensive, and there is no summer work requirement.

ANATOMY AND PHYSIOLOGY

11-12 1 credit 2 semesters (full year) CP \$85.00

(Prerequisite: Biology I and current enrollment in or successful completion of Chemistry I or Chemistry in the Community)

This college-preparatory course will study the human body, its structure, functions, and mechanisms of motion. All of the systems found in the human body will be addressed. It is based on an activity/lecture format. A textbook and lab book will enhance the lectures and discussions. There will be numerous labs and a major dissection.

ENVIRONMENTAL SCIENCE

11-12 1 credit 2 semesters (full year) CP \$25.00

(Prerequisite: Biology I and current enrollment in or successful completion of Chemistry I or Chemistry in the Community)

This is a college-preparatory course in which students will study our environment using scientific investigation, problem solving, and creative thinking. Topics will include global thinking, ecology, biodiversity, air pollution, water pollution, and soil pollution/conservation.

CHEMISTRY I

11-12 1 credit 2 semesters (full year) CP \$25.00

(Prerequisite: Biology I, Algebra I and Geometry at 'A' or Honors level with 80% average or higher. Enrollment in Algebra IIA and have passed Math and Science OGT Tests.)

This course is recommended for college-bound students who have a strong interest in math and science. It includes the metric system, classification of matter, chemical formulas and names, and the study of chemical reactions. The structure of the atom and the relationship to its location on the Periodic Table is studied. The course concludes with thermodynamics, acid-base reactions, oxidation-reduction, and organic chemistry.

CHEMISTRY IN THE COMMUNITY (CHEMCOM)

11-12 1 credit 2 semesters (full year) CP \$25.00

(Prerequisite: Biology I with 'C' or better or successful completion of Physical Science with an "A" average. Also, Algebra 1B and Geometry B)

This course is recommended for students who are college-bound non-science majors. A reasonable working knowledge of math is essential. ChemCom is an attempt to enhance scientific literacy through a curriculum that emphasizes the impact of chemistry on society, and practical hands-on lab experiments. Units include: Water: Exploring Solutions; Material: Structure and Uses; Petroleum: Breaking and Making Bonds; Air: Chemistry and the Atmosphere; Industry: Applying Chemical Reactions; Atoms: Nuclear Reactions; and Food: Matter and Energy for Life.

ADVANCED PLACEMENT CHEMISTRY

12 1 credit 2 semesters (full year) AP/H \$60.00

(Prerequisite: Chemistry I with 93 or better and teacher recommendation)

This honors course is designed to be the equivalent of a general chemistry course usually taken during the first year of college. Primarily an inorganic survey course, it covers an in-depth study of the structure of matter, states of matter, chemical reactions, and descriptive chemistry. It involves extensive laboratory work.

PHYSICAL SCIENCE

11-12 1 credit 2 semesters (full year) G \$25.00

(Prerequisite: Biological Survey and desire to participate in extensive lab activities)

This course is designed to give students a solid understanding of the basic concepts of the physical world, including topics in both chemistry and physics. This course is recommended for students who do not plan a senior year of science. Students will actively participate in "hands-on" laboratory activities and learn the science of everyday activities.

AP PHYSICS

12 2 credits 2 semesters (full year) AP/H \$25.00

(Prerequisite: Chemistry I, Pre-calculus, Honors Algebra I, or an "A" in Algebra II.)

This full year AP Physics course provides the student with an opportunity to have an accelerated college program in physics. Topics covered: mechanics, electricity and magnetism, thermal physics, waves and optics, and atomic and nuclear physics.

PHYSICS

11-12 1 credit 2 semesters (full year) CP \$25.00

(Prerequisite: Algebra II or Honors Math with 75 or better, Chem I or ChemCom.)

This college-preparatory course is the study of the interactions of matter and energy through the study of mechanics, wave motion, light, sound, electricity, magnetism, and modern physics topics. It is designed as the algebra-based standard taken by a student who is interested in a mathematical course in physics.

CONCEPTUAL PHYSICS

12 1 credit 2 semester (full year) CP \$25.00

(Prerequisite: Chemistry I or Chem Com and Algebra IIB or higher math course)

This college-preparatory course is the study of the interactions of matter and energy through the study of mechanics, wave motion, light, sound, electricity, magnetism, and modern physics topics. It is designed to cover the topics found in any high school physics course without the constraints of complicated mathematics.