

# SCIENCE

## **PHSC102 Earth/Space Science**

**Prerequisite: None**

**Level: 9  
Credit: 1 unit**

This course will provide students with basic knowledge of Earth's systems composition, dynamics and atmospheric forces combined with space science. Earth's system and dynamics will include the rock cycle, the hydrologic cycle, and the tectonic cycle. Atmospheric forces will include the atmosphere, cloud formations, weather prediction, fronts and severe weather. Space science will include our solar system, formations of planets and stars, black holes and possible origins of the Universe. This class will contain lecture, discussion, lab activities and the use of current multimedia materials.

## **PHSC103 Biology**

**Level: 9-12  
Credit: 1 unit**

**Prerequisite: Earth/Space Science or 9<sup>th</sup> graders who have an 8<sup>th</sup> grade science teacher recommendation (based on late work, missing work, state assessments, and attendance rates) and concurrent enrollment in Earth/Space Science**

Biology is presented as active learning through experimental science and to demonstrate the status of Biology in the 21<sup>st</sup> century. This course will also illustrate its usefulness for students who will spend most of their lives in that century. The aim of this class is for the general student in Biology and not just college-bound individuals. Focus will be on content of Biology at the levels of organization of populations, communities, and the biosphere. Students will have insights that will enrich their lives and their ability to become responsible citizens.

## **PHSC203 Advanced Biology**

**Prerequisite: Biology and the completion of Chemistry or concurrently enrolled in Chemistry.**

**Level: 10-12  
Credit: 1 unit**

This course is an outdoor/indoor laboratory course designed for students who have successfully completed a basic course in Biology and exhibited a strong desire for a more intensive and in-depth study of experimental Biology. A primary goal of the course is to provide first-hand investigation experiences in the following areas: limnology (fresh water study), embryology, microbiology, anatomy and physiology, heredity, and animal behavior.

**PHSC204 Chemistry 1****Prerequisite: Biology and completion of Algebra 2 or concurrently enrolled in Algebra 2****Level: 10-12****Credit: 1 unit**

Chemistry is the study of materials, their composition and structure, the changes they undergo, and the energy involved in these changes. The structure and periodicity of the elements, formulas, and equations, solutions, chemical kinetics, and acids/bases/salts are emphasized. Much emphasis is placed on the activities of experimentation, measurement, observation, and interpretation.

**PHSC300 Chemistry 2****Prerequisite: Chemistry 1****(concurrent credit through Fort Scott Community College is available)****Level: 11-12****Credit: 1 unit**

Chemistry 2 is a course designed for students who have shown great ability and interest in chemistry. Topics covered in Chemistry 1 will be expanded upon, and the new topics of organic, nuclear and thermo chemistry will be introduced. Emphasis is placed on individual experimentation. Much of the time will be spent in the lab doing experiments in qualitative and quantitative analysis.

**PHSC310 Introduction to Physics & Chemistry****Prerequisite: Biology****Level: 11-12****Credit: 1 unit**

Introduction to Physics and Chemistry is a course designed to help students prepare for vocational careers or future science classes. The focus is to show students how science affects their daily lives. The course is split approximately in half between Chemistry and Physics concepts. A variety of student projects will be used to reinforce classroom concepts. Objectives include learning safety concerns and why chemical reactions occur. The Physics portion uses everyday experiences and explores the scientific concepts behind them. Examples include the forces involved while driving on a snow covered road.

**PHSC401 College Biology****Prerequisite: Chemistry 1****(concurrent credit through Fort Scott Community College is available)****Level: 11-12****Credit: 1 unit**

This class will explore the relationships between cell structure and function and the interaction of organisms with each other and their environments. This class will cover characteristics, organization, and the life processes of living organisms. Laboratory exercises will reinforce these concepts and principles.

**PHSC402 Physics****Prerequisite: Algebra 2****Level: 11-12****Credit: 1 unit**

(concurrent credit through Fort Scott Community College is available)

Physics is the study of the nature of the universe. The course is divided into four areas: mechanics, thermodynamics, waves, and electromagnetism. *Mechanics* is the study of the relationships between such qualities as velocity, acceleration, force, energy, and momentum. *Math* is strongly relied upon to define these relationships. Thermodynamics is the study of how heat energy is transferred to and from various systems and how it affects different materials. Waves include the study of sound and light, including the basis of optics. Electromagnetism includes simple circuit analysis and how magnetism and electricity relate to each other.