

# SCIENCE (SCI)

## SCI 1901. Selected Topics in Science (3)

A group of courses which examine a variety of topics in science disciplines presented at an introductory level. Descriptions of individual courses within the group are provided below.

### SCI 1901A. Introduction to Space Travel (3)

This course introduces the concept of space travel, starting with the understanding of interplanetary and interstellar distances and Earth's place in the Universe. Topics include the basics of propulsion and rocket systems design, concepts of orbital and escape velocity, overview of missions from Earth to other planets. Additionally, possibility of interstellar travel within current science realm will be discussed covering some futuristic possibilities that are widely used in science fiction. Students will also study some select tools of astronomy and how they have shaped its progress. Topics will be covered from a historical as well as a contemporary point of view.

### SCI 1901B. Plants and Society (3)

Emphasizes plants in everyday life. Topics include the basic structure and function of plants, identification of common plants, plant ecology, economic botany, backyard botany, medical plants and poisonous plants.

### SCI 1901C. Extraordinary Chemistry (3)

Presents chemical science in a way that reflects both the excitement and concerns with the rapidly changing uses and needs of chemicals in the world. Topics include everyday chemicals to which we are exposed, the food we eat, ozone pollution, mind-altering drugs, batteries, and buckminsterfullerene. Emphasis will be placed on the development of skills that allow the student to affect policies that govern the access and use of chemicals in the future for the benefit of everyone.

### SCI 1901D. Health And Disease (3)

A survey of the biology of diseases that currently impact society, including proposed prevention and cure. Examples include cardiovascular disorders, infectious diseases, cancer and diabetes.

### SCI 1901E. Energy Production and Climate (3)

Emphasizes topics involving energy production and its transfer to the understanding of biological and physical systems by examining a variety of aspects of energy resources, including the principles involved, and the environmental and economic consequences of energy production and use.

### SCI 1901F. Forensic Science (3)

Provides an introduction to the science of forensics. Topics will include various scientific principles and techniques used in solving crimes. Case studies will be presented.

### SCI 1901H. Human Genetics (3)

A study of human genetics examining major breakthroughs and current issues in human heredity. The course will include the science of genetics, and the societal implications of topics such as the human genome project, DNA fingerprinting, genetics and intelligence, and genetic engineering.

### SCI 1901J. Environmental Science (3)

Environmental Science explores the interactions between society and the environment using an interdisciplinary approach. Topics that will be covered in this course are scientific principles, the dominant resources and our interactions with those resources, historical interactions with the environment, and our current environmental problems.

### SCI 1901M. Biology of Dinosaurs (3)

A course on the ecology, behavior, and evolution of the animals known as dinosaurs, with emphasis on the species of the Mesozoic Era.

### SCI 1901N. Intro to Tropical Ecology (3)

This study abroad course focuses on ecology of terrestrial, aquatic, and marine tropical organisms. This introductory level course will emphasize marine and terrestrial ecology of the Caribbean basin. Issue pertaining to climate change and coral reef conservation will be discussed. The majority of the course will take place at the Gerace Research Centre on the island of San Salvador in the Bahamas.

### SCI 1901P. Intro to Rainforest Ecology (3)

This course is designed for non-science majors. The program will utilize Costa Rica as a base for the field portion of the course. Students will have the opportunity to work with researchers on various projects concerning tropical rain forest ecology, conservation, and sustainable agriculture. In addition, students will travel to various sites around the country encompassing the typical ecological zones of Costa Rica, including additional field work opportunities, excursions into the rainforests, as well as lectures from experts. The trip will be supplemented by pre-trip lectures and exams, as well as student projects to be completed upon returning from Costa Rica.

### SCI 2900. Scientific Inquiry (2)

This course will develop students' ability to read, analyze, and evaluate scientific literature. Students will learn how to find and identify primary literature that they can use to design investigations into biological and chemical questions. Students will be expected to write scientific papers that effectively communicate the ideas and thoughts underlying their investigations. In addition, students will learn how to effectively navigate majoring in a science at Clayton State through identifying courses and experiential learning opportunities that map onto their career goals.

**Prerequisites:** (BIOL 1107 and BIOL 1107L) or (BIOL 1108 and BIOL 1108L) or (CHEM 1211 and CHEM 1211L) or (CHEM 1212 and CHEM 1212L)

### SCI 3110. Physical Science I (2)

A one-semester, activity based course that incorporates methods, content, central themes and technology for teaching physical science in the middle grades. The topics addressed include: energy and heat; science, society and technology; machines and force; and matter. This course is open only to Middle Level Teacher Education students.

**Prerequisites:** SCI 3110L (may be taken concurrently)

### SCI 3110L. Physical Science Laboratory (1)

Laboratory accompanying SCI 3110. Laboratory includes both Physical Science and Pedagogy.

### SCI 3120. Physical Science II (3)

A one-semester, activity based course that incorporates methods, content, central themes and technology for teaching optics, atomic physics, nuclear physics, and inorganic chemistry, and organic chemistry in the middle grades. Includes laboratory. This course is open only to Middle Level Teacher Education students.

### SCI 3130. Integrated Science-Life Scienc (3)

A one-semester, activity based course that incorporates methods, content, central themes and technology for teaching for teaching life science in the middle grades. The topics addressed include: cells, tissues, animal behavior, classification, plant and animal systems, genetics and ecology. This course is open only to Middle Level Teacher Education students.

**SCI 3140. Physical Science III (3)**

This course will examine Earth science and space science concepts encountered in the middle-grades curriculum. Topics will include Earth materials, Earth structure and dynamics, hydrology, meteorology, planetary and stellar astronomy, and space exploration. This course is open only to Middle Level Teacher Education students.

**SCI 4901. Secondary Ed Science Instruct. (3)**

This course will explore theory and pedagogy of science instruction with a focus on teaching methods across a variety of topics. Appropriate integration of technology into science teaching and learning will be emphasized.

**Restrictions:** Biology with Teacher Cert