

# NATURAL SCIENCES (NS)

## NS 101 T1:FD:Sci/Contemp Hlth Iss 3 sem. hrs.

Primary emphasis on facilitating an understanding of the value of science and the use of the scientific method in problem solving, exploring the dynamics of human physiology, and evaluating health-related physiological activities. Important health issues and related contributions from the sciences are investigated. A variety of viewpoints and theories are examined in depth rather than from any one particular perspective. Trends in current research are important in both classroom discussion and course-related projects. Offered every fall and spring.

## NS 103 T1:TH2:Environmental Science 3 sem. hrs.

A course for students interested in environmental issues (greenhouse effect, waste disposal and energy management, recycling, deforestation, etc.), ecology, and applications affecting life processes on earth. In addition to an in-depth look at the synergy of the interacting life processes inextricably linked with the earth, the effects of human behavior on that synergy are explored. A variety of viewpoints, theories, and strategies are considered. Course includes a balance of research-based information, practical knowledge and applications, and opportunity to use the scientific method in course-related projects. Offered every fall and spring.

## NS 103L Environmental Science:Lab 1 sem. hr.

This course is to be taken by Environmental Science majors only. It is a more in-depth look at an introduction to environmental science to prepare ES majors for the next level of courses. Offered every semester in conjunction with NS 103.

## NS 104 T1:FD:Physical Science 3 sem. hrs.

This course is an introduction to the principles and concepts of physics and chemistry. In physics, Motion, Energy, Heat and Temperature, Waves, Electricity, and Light are discussed. In chemistry, Atoms, Bonds, Reactions, Water and Solutions, and Nuclear Chemistry are discussed. 3 credit hours, offered every fall online. Prerequisite: MATH 104

## NS 105 T1:FD:Introduction to Geology 3 sem. hrs.

Introduction to principles and concepts of earth science, including plate tectonics, oceans, glaciers, soils, earthquakes, earth's crust, volcanic activity, and geological record of minerals and how the earth was formed. Other related topics will be presented as time permits. This is a physical science course. Offered every spring.

## NS 105L Intro to Geology Lab 1 sem. hr.

## NS 109 T1:FD:Technology/Society 3 sem. hrs.

Where has technology brought us, and what will 21st century technology look like? What kind of scientific foundation is needed for this technology? This course will briefly survey the history of technology and its effects on societies past and present. Students will identify emerging technologies the science needed for those technologies, and examine the effects on individuals, families, work, and society as a whole. Next offered TBA.

## NS 110 Plagues Engineered by Humans 3 sem. hrs.

The past and future effects of plagues on humankind will be discussed. This course will explore the possibilities of plagues that may be unleashed knowingly and perhaps innocently. No prerequisite.

## NS 111 T1:FD:Plants, Foods, Med&Text 3 sem. hrs.

A study of plants useful to humans with emphasis on medicinal and agricultural uses. Issues covered will include the origins of domestication, the role in nature of plant products and the ways these plant products have been altered by humans through artificial selection and genetic modifications. Offered fall.

## NS 112 T1:FD: Science for ECE 3 sem. hrs.

This course will introduce students to select topics in life sciences, physical sciences, and Earth and space sciences which are addressed in Ohio Early Childhood Learning Standards. Each topic will be paired with inquiry activities that allow students to participate in hands-on applications. Discussions will include how to integrate this science content with other disciplines and how to design simple experiments. Offered as needed.

## NS 113 Chemistry of Water 3 sem. hrs.

This course will explore water from chemical, physical, biological and socioeconomic perspectives. The availability of pure water is critical to human existence for many reasons, not least of which is drinking water. The early part of the course will set the stage for robust discussion about local, regional, national and global issues surrounding water as a resource. The course will involve a blended learning experience with some lecture, in-class exercises, discussion, reflections and a digital project. This course has no prerequisites.

## NS 114 CH:FD:Intro ForensicSci. 3 sem. hrs.

This introductory course will focus on a variety of forensic sciences and their application to crime scene investigation. The course begins with an introduction to forensic science, crime scene investigation, nature of evidence, and an overview of chemistry. Patterns and impressions include fingerprints, firearms, and tool marks. The forensic biology topics include pathology, anthropology, odontology, and entomology. The forensic chemistry topics include illicit drugs, fibers and other polymers, accelerants, and explosives. Group activities serve to supplement these topics and encourage critical thinking. Offered every fall and summer online.

## NS 119 T1:FD:Microbes in the Environ. 3 sem. hrs.

This course is an introduction to the world of microorganisms and how they impact humans of the 21st century. Topics that will be discussed include the place of microbes in ecology and the environment, the uses of microbes in biotechnology, the role of microbes in food production, and numerous other ways that microbes contribute to the quality of our lives. The course also explores bioterrorism, the problem of antibiotic resistance, and surveys microbial diseases of history and contemporary times. Some lab exercises included in the class meeting time. NOT INTENDED FOR SCIENCE OR NURSING MAJORS.

## NS 175 Great Biographies of Science 3 sem. hrs.

Course description unavailable.

## NS 207 Nutrition 3 sem. hrs.

Introduction to basic principles of normal nutrition. Topics include composition of food groups relative to fats, carbohydrates, proteins, vitamins, minerals, and trace elements; specific functions of these components; the four food groups and six food exchanges; some of the current controversial diets and issues in nutrition. Open to all students.

## NS 210 T1:FD:Astronomy/Planetary Sci 3 sem. hrs.

This course includes theories of the origin of the universe and its large-scale structure. Discussion will include the laws which govern the behavior of matter and energy throughout the universe. We will describe various objects and systems which are the subjects of astronomy. We will survey the techniques used by astronomers in their study of the cosmos. Students will learn about solar systems, the physics of planetary systems, the discovery of solar systems outside our own, and a survey of the components of our own solar system. Offered every fall.

**NS 215 CH: T1:FD:Forensic Chemistry 3 sem. hrs.**

This course will focus on a variety of topics in forensic chemistry and the analysis of evidence. An overview of drugs and pharmacology will be presented with an emphasis on forensic drug analysis. The chemical analysis of physical evidence includes the chemistry of combustion, arson, color, colorants, inks, paints, and polymers. The forensic analysis of paper, fibers, and polymers will also be covered in this course. Group activities serve to supplement these topics and encourage critical thinking. Open to all students. Offered every spring online.

**NS 222 TH2:CH:CIT: AI Forens.Invest. 3 sem. hrs.**

AI for Forensic Investigation is a dynamic exploration of cutting-edge Artificial Intelligence (AI) applications in modern-day forensic investigations. This course requires no prior knowledge of AI and some topics include AI applications, potential benefits and limitations of AI in forensic science, ethical considerations in crime scene investigations, and using AI to enhance forensic analysis. Through interactive lessons, real-world case studies, and engaging activities, you'll gain a foundation in AI and its potential to transform how crimes are solved. Offered every spring online. No prerequisites. Three credit hours

**NS 430 GIS/Remote Sensing 3 sem. hrs.**

Fundamental concepts of Geographic Information Systems (GIS), elements of GIS, analysis of spatial information, real-world applications, map creation and analysis. Offered spring semester on odd-numbered years.

Prerequisite: junior standing.