

SCIENCE (SCI)

SCI 1XX: Science Placeholder

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lecture

SCI 2XX: Science Placeholder

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lecture

SCI 3XX: Designated Science Elective

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lecture

SCI 101: Environmental Science

Environmental Science is the study of how humans and the natural environment interact. Critical issues that affect our daily lives such as clean drinking water, urban renewal, energy availability, pesticides, global warming, acid rain and recycling are explored from social, ecological, chemical and political perspectives. Students will tackle a real-life environmental problem in a professional manner using critical thinking and analytical skills, library research skills, teamwork and presentation skills.

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lecture

SCI 101AC: Environmental Science

Credits: 3

College: Jefferson College of Health Professions

Schedule Type: Lecture

SCI 102: Exploring Science

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lab, Lecture

SCI 106: Biology for Design

Biology for Design: From biological adaptation to biomimetic design (3-0-3) The goal of this course is to increase the sophistication of design, engineering, business, and other students regarding how design manifests itself in nature as biological adaptation, and to use that knowledge as a launching pad for thinking about biomimetic design. Biomimicry is a hot topic in architecture and design. Work in this field is usually done by designers working in collaboration with biologists who are highly specialized in a particular area, often plant or animal physiology. However, there are certain conceptual underpinnings pertaining to design and adaptation in nature that designers are often lacking that will prepare them for further exploration of this field. The course consists of two major units, the first focusing on the biology of adaptation from an evolutionary and ecological perspective. The second section consists of a survey of biomimetic design and how biomimicry has been employed to solve a range of design problems in architecture, materials science, systems design, and technology.

Credits: 3

College: School of Design & Engineering

Schedule Type: Lecture

SCI 108X: Sustainability & Eco-Innovation

Credits: 3

College: School of Design & Engineering

Schedule Type: Lecture/On-Line

SCI 109: Sys Thinking & Sustainability

The field of sustainability will be surveyed using the lens of Systems Thinking. Students will be introduced to the rate and scale of environmental impacts resulting from climate change, our industrial food system, and waste accumulation in linear models of production, with case studies considered from multiple perspectives and disciplines. Students will develop systems models to identify key feedbacks and interactions among factors. A final team-based inquiry-driven project will involve analysis of a focal area of choice, to characterize sustainability challenges and opportunities for focused interventions, with consideration of social equity dimensions and model limitations.

Credits: 3

College: School of Design & Engineering

Schedule Type: Lecture

SCI 110: Landscape Ecology

Landscape Ecology combines the spatial approach of the planner and designer with the functional approach of the ecologist. As a field it is an integrative and multidisciplinary science that combines geology, botany, zoology and human settlements at the "landscape" scale. For this course the focus will be various land use scales, i.e., the block, neighborhood, city, and region and how ecological processes function at each scale. Students learn the key principles of landscape ecology and then how to apply them to preservation, conservation, planning and the design process.

Credits: 1

College: Jefferson Coll of Architecture & Built Environment

Corequisites: SCI 110L

Schedule Type: Lab, Lecture, Lecture/Lab

SCI 110L: Landscape Ecology Lab

Landscape Ecology combines the spatial approach of the planner and designer with the functional approach of the ecologist. As a field it is an integrative and multidisciplinary science that combines geology, botany, zoology and human settlements at the "landscape" scale. For this course the focus will be various land use scales, i.e., the block, neighborhood, city, and region and how ecological processes function at each scale. Students learn the key principles of landscape ecology and then how to apply them to preservation, conservation, planning and the design process.

Credits: 2

College: Jefferson Coll of Architecture & Built Environment

Corequisites: SCI 110

Schedule Type: Lecture/Lab

SCI 112: Materials Selection

Credits: 3

College: School of Design & Engineering

Schedule Type: Lecture

SCI 198: Sciences I

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lecture

SCI 199: Sciences II

Credits: 3

College: Jefferson College of Humanities & Sciences

Schedule Type: Lecture

SCI 200: Intro to Sci Research Methods

What does it mean to conduct research? What are the distinct stages of the research process? What are the requirements of modern scientific research? How do you analyze a scientific article? This course will teach you to conduct research in accordance with scientific methodology. You'll learn to critically review scientific literature, and to design and conduct scientific experiments. The course will help you to develop the core skill sets required in any research setting. Topics in scientific communication and data analysis will also be discussed.

Credits: 1**College:** Jefferson College of Life Sciences**Schedule Type:** Lecture**SCI 300: Basic Pharmacology**

This course introduces the student to the basic principles of pharmacology including pharmacokinetics and pharmacodynamics. The course will cover frequently prescribed medications, their uses, actions and common side effects. The student will learn about the various drug classification systems, as well as the effects of those drug classes on specific patient populations, and the process of preventing medication errors deriving from the use of pharmacologic agents.

Credits: 3**College:** Jefferson College of Life Sciences**Schedule Type:** Lecture**SCI 381: Independent Study in Science**

Students interested in pursuing independent study in science must submit a proposal to the academic associate dean of undergraduate programs in the College of Science, Health and the Liberal Arts for approval at least two weeks before pre-registration. Detailed guidelines for development of the proposal may be obtained from the College. See "Independent Study" in "University Academic Policies and Procedures: Common Academic Policies for All Students."

Credits: 3**College:** Jefferson College of Humanities & Sciences**Schedule Type:** By Appointment - 1 student, Independent Study**SCI 382: Independent Study in Science****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Schedule Type:** Independent Study**SCI 399: Selected Topics Abroad in Sci****Credits:** 4**College:** Jefferson College of Humanities & Sciences**Schedule Type:** Lab, Lecture**SCI 402: Science Seminar**

This communication intensive course conveys recent advances in biological, physical, and medical sciences by way of presentation, journal reviews, and discussions involve both students and invited faculty. This course is designed to sharpen students' critical thinking skills through evaluation of modern scientific discoveries and analysis of their impact on society and humanity as a whole. Integration of knowledge and ideas from various sources is required. [Writing Intensive]

Credits: 3**College:** Jefferson College of Humanities & Sciences**Schedule Type:** By Appointment - 1 student, Hybrid, Lecture