

INTERDISCIPLINARY COURSES & EARTH SCIENCES COURSES

The courses described here do not constitute a major by themselves, but may be taken as part of other majors such as Natural Sciences or taken as electives to increase the student's knowledge.

GS300 Faculty-Led Education Abroad (1.0 Credits)

This course may be offered in conjunction with a faculty-led education abroad experience. The course's learning goals and objectives and the activities designed to meet them depend on the nature of the education abroad experience. The course may meet before and after the education abroad experience in addition to during the experience. Students spend approximately 12.5 hours in formal instruction and have approximately 25 hours of learning activities outside of class per credit. With the approval of the department chair, the course may be used for credit in the major.

SC115 Science, Technology & Society (3.0 Credits)

Study the development, application, and principles of modern science. It will describe what science and technology is, how it is practiced, who practices it, how discoveries are made and accepted, and what the impact of science is on society. Important scientific theories and principles will be examined as well as modern problems and controversies facing science today, drawn from many fields of science.

SC165 Science in Art (4.0 Credits)

This course explores how art, biology, and chemistry mutually illuminate the exploration and beauty of our surroundings. The course will cover examples, from various countries and time periods, of how humans have accomplished such exploration. The students will be encouraged to make their own personal connections between these ways of learning based on their backgrounds and cultural heritage. 3 hours lecture, 3 hours laboratory.

SC350 Climate Change (4.0 Credits)

This introductory semester course uses online delivered data to develop climate in a systems approach. The paradigm of climate systems and sustainability will use critical thinking skills to frame the concepts of climate change and climate variability. Real time data will assess climate issues over the range of time and human involvement. 3 hours lecture, 3 hours laboratory.

SC360 Environmental Sustainability (3.0 Credits)

Develop critical thinking skills and evaluate information about the impact that current "Western" lifestyles and population trends have on the attainment of a sustainable environment. Investigate the goods and services provided to humans by nature and the impacts of human activities on nature's ability to provide these benefits. Analyze specific environmental issues related to sustainability and reflect upon how and to what extent our individual and collective behaviors impact the problems. Explore possible solutions that can be employed, both personally and societally, including insights gained from the ways in which non-Western societies relate to one another and to the environment. Consider the ethical dilemmas generated by humans as consumers and the value of promoting social justice, respect for rights of humans, non-human organisms and the environment, and a commitment to action and care for others.

Prerequisite(s): BI109 or BI120.

SC393 Coastal Geomorphology (4.0 Credits)

An introductory course that stresses the origin, processes and physiography of the coastal zone. Emphasis will be placed on a systems approach to issues facing the coastal zone by applying skills and techniques from other allied sciences. Local areas will serve as resources for the course in which one of the final goals will be a model based on time, structure and process. Required at the end of the course will be an original manuscript that uses the theme of stewardship for society and the coastal zone.

Prerequisite(s): Two semesters of science courses.

SC405 Earth Science (4.0 Credits)

Traditional topics in earth science including minerals and rocks; geologic time and the age and origin of the Earth; plate tectonics; mountains and volcanoes; the Earth's interior; the hydrosphere, atmosphere, and biosphere. 3 hours lecture, 3 hours laboratory.

Prerequisite(s): BI109, CH112, PH112, and any two 200/300- level science course required for the B.S. Natural Sciences degree.

SC433 Oceanography (4.0 Credits)

Study of physical oceanography, including dynamics of ocean currents, waves, tides, and thermoclines; physical properties of ocean water; and effects of geological plate tectonics, including volcanic eruptions, coastal dynamics, ocean-atmosphere interactions, and stewardship. 3 hours lecture, 3 hours laboratory.

Prerequisite(s): Two semesters of basic science courses.

SUS400 Transitioning to a Sustainable Society (3.0 Credits)

The purpose of this interdisciplinary, advanced topic course in sustainability is to assist students in the process of integrating the material from the core courses in the minor into a unified whole. Through reading and discussion of seminal and contemporary texts, students will examine and analyze the contemporary debate on if and how our globalized society can transition from conventional operating systems which experts say have us on a crash course for extinction, toward modes of living and being which prioritize human need, well-being and planetary biophysical boundaries, and ideally, result in sustainable prosperity for more than just a small percentage of wealthy and powerful groups. This course will also challenge students to look at how interdisciplinary sustainability issues manifest within their chosen disciplines. The course is meant to provide students with the intellectual tools they need to examine current events and problems, as well as suggested "fixes" for those problems, through a systems thinking lens, and with an enlightened and perceptive view of future impacts. It is also meant to counter the "doom and gloom" feelings that are inevitably conjured up in environmental and sustainability courses, with a hopeful view of the potential for social change and a viable way forward, of which they should feel better prepared to be a part of after completing this course.

Prerequisite(s): Completion of at least 12 credits of the Required Courses in Sustainability Minor, including BI360.

SUS410 Internship in Sustainability (2.0 Credits)

The sustainability internship is a 90-hour (2 credit) or 120-hour (3 credit) sustainability-based/career-oriented work experience performed outside the university. It is arranged and developed by the individual student in conjunction with the sustainability director. The purpose of the internship program is to encourage students to gain firsthand experience in a specific sustainability-based career, or provide students opportunities to satisfy personal learning objectives that require facilities outside the university.

Prerequisite(s): Completion of 12 credits in the minor.