

SCIENCE EDUCATION (SCED)

See Course Description Symbols and Terms (<https://catalog.csuchico.edu/academic-standards-policies/course-description-symbols-terms/>) for an explanation of course description terminology and symbols, the course numbering system, and course credit units.

SCED 101 Introduction to Earth System Science 3 Units GE

Typically Offered: Fall and spring

This course focuses on the principles and scientific thought processes as they relate to climate change, air and water resources, and ecosystem alteration. The Earth's physical environment is the primary focus, although a portion of the course covering ecosystems bridges physical and biological interrelatedness of the global environment. Problem solving skills and skills in analyzing environmental issues are emphasized. 2 hours activity, 2 hours discussion. (020268)

General Education: Physical Science (5A); Laboratory (B3)

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 3 units

Course Attributes: Lower Division

SCED 102 Introduction to Living Systems 4 Units GE

Typically Offered: Fall and spring

An integrated study of the nature and interactions of living things and their environments. This course is an introduction to the processes of evolution and speciation, ecology and ecosystem processes, cellular biology and organismal physiology. The course is primarily for students without a strong background in high school biology or chemistry. The course includes online content delivery, in-class discussion, and a hands-on activity session. 2 hours activity, 3 hours discussion. (020372)

General Education: Laboratory (5C); Biological Science (5B)

Cross listing(s): BIOL 102

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 4 units

Course Attributes: Lower Division

SCED 140 Teaching Science in a Museum Setting 1 Unit

Typically Offered: Fall and spring

Students in this course facilitate the elementary grade level field trip activities for visiting K-8 students at the Gateway Science Museum to foster an appreciation and understanding of the natural world around them. 2 hours laboratory. (022437)

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 2 units

Course Attributes: Lower Division

SCED 141 Concepts in the Physical Sciences 3 Units

Prerequisite: Recommended: Concurrent enrollment in or prior completion of MATH 110.

Typically Offered: Fall and spring

Basic concepts of motion, force, energy, chemical change, and their interactions. Intended for Science Education or Liberal Studies majors. 4 hours activity, 1 hour lecture. (004132)

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 3 units

Course Attributes: Lower Division

SCED 142 Concepts in Life Science 3 Units

Prerequisite: GE Physical Science (5A) or SCED 141.

Typically Offered: Fall and spring

Study of the nature and interactions of living things on the planet. Includes cell organization; diversity and physiology of plants and animals; DNA and genetics; ecology; and evolution. Intended for Science Education or Liberal Studies majors or others interested in K-8 teaching. 4 hours activity, 1 hour lecture. (020915)

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 3 units

Course Attributes: Lower Division

SCED 143 Explore Teaching Science in Outdoor Settings 1 Unit

Typically Offered: Spring only

This course is for students with an interest and/or background in environmental issues who want to learn how to facilitate learning about environmental problems and solutions in a variety of outdoor settings. 1 hour seminar. (022438)

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 1 unit

Course Attributes: Lower Division

SCED 198 Special Topics 1-3 Units

Prerequisite: Department permission.

Typically Offered: Fall and spring

This course is for special topics offered for 1.0-3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See the Class Schedule for the specific topic being offered. 1 hour lecture. (006394)

Grade Basis: Graded

Repeatability: You may take this course more than once

Course Attributes: Lower Division

SCED 300W Scientific Innovations Behind Modern Technology (W) 3 Units GE, W

Prerequisite: GE English Composition (1A), GE Critical Thinking (1B), GE Oral Communication (1C), GE Mathematical Concepts/Quantitative Reasoning (2); or faculty permission.

Typically Offered: Fall and spring

This course explores the history of innovations in the natural sciences that have contributed to major breakthroughs in technology. Students examine the intended and unintended consequences of these innovations on society. The second half of the course looks at innovations of the digital age. Students research possible implications of new technologies on the quality of life for future generations. An emphasis will be placed on evidence-based reasoning and writing skills. 3 hours lecture. (021115)

General Education: Upper-Division Physical/Biological Sciences (UD5); Innovation, Design, and the Arts Pathway; Science, Technology, and Society Pathway

Grade Basis: Graded

Repeatability: You may take this course for a maximum of 3 units

Course Attributes: Upper Division; Writing Course

- SCED 321W Scientific Inquiry (W)** **3 Units W, GW**
Prerequisite: GE English Composition (1A), SCED 141, SCED 142.
Typically Offered: Spring only
 This course engages students in inquiry into topics that span the scientific disciplines. Skills addressed include experimental design, modeling, representation, dissemination of results, and critique of peers' work. Content topics include light, color and sound, from biological, chemical and physics perspectives. 4 hours activity, 1 hour lecture. (020914)
Grade Basis: Graded
Repeatability: You may take this course for a maximum of 3 units
Course Attributes: Upper Division; Writing Course; Graduation Writing Assessment Requirement Course
- SCED 342 Concepts in Earth and Space Science** **3 Units**
Prerequisite: SCED 141 or GE Physical Science (5A); and SCED 142 or GE Biological Science (5B).
Typically Offered: Fall and spring
 Fundamental concepts in 1) the solar system and the universe, 2) the structure and composition of the solid Earth, and 3) Earth's atmosphere and water. Intended for Science Education or Liberal Studies majors and students pursuing a single subject teaching credential in science. 4 hours activity, 1 hour lecture. (004144)
Grade Basis: Graded
Repeatability: You may take this course for a maximum of 3 units
Course Attributes: Upper Division
- SCED 343 Concepts in Environmental Sciences** **3 Units**
Prerequisite: SCED 141 or GE Physical Science (5A); and SCED 142 or GE Biological Science (5B).
Typically Offered: Fall and spring
 A course designed to introduce basic principles and concepts in environmental science. Field investigations in the local environment provide a natural setting for scientific inquiry and student research on environmental processes and conditions that shape the local landscape. Intended for Science Education or Liberal Studies majors and students pursuing a single subject teaching credential in science. 4 hours activity, 1 hour lecture. (020916)
Grade Basis: Graded
Repeatability: You may take this course for a maximum of 3 units
Course Attributes: Upper Division; Sustainable Course
- SCED 389 Internship** **1-3 Units**
Typically Offered: Inquire at department
 This course is an internship. You must register directly with a supervising faculty member. 0 hours supervision. (022439)
Grade Basis: Credit/No Credit
Repeatability: You may take this course for a maximum of 15 units
Course Attributes: Upper Division
- SCED 398 Special Topics** **1-3 Units**
Prerequisite: Department permission.
Typically Offered: Fall and spring
 This course is for special topics offered for 1.0-3.0 units. Typically the topic is offered on a one-time-only basis and may vary from term to term and be different for different sections. See the Class Schedule for the specific topic being offered. 3 hours lecture. (020470)
Grade Basis: Graded
Repeatability: You may take this course more than once
Course Attributes: Upper Division
- SCED 490 Natural Sciences Seminar** **2 Units**
Prerequisite: Senior standing.
Typically Offered: Fall only
 This course is a capstone experience for Natural Sciences Majors. In this course, students reflect on their work in the program, read and discuss the relevant literature, and synthesize their accomplishments across the sciences into a professional portfolio. In addition, students are required to present a portion of their portfolio as a departmental seminar. 2 hours seminar. (021290)
Grade Basis: Graded
Repeatability: You may take this course for a maximum of 2 units
Course Attributes: Upper Division
- SCED 495 Science Education Capstone** **3 Units**
Prerequisite: SCED 490.
Typically Offered: Spring only
 This course is intended for future middle school and informal science teacher educators. Students explore and analyze discipline-based education research articles and apply the principles of behavioral sciences within a science learning environment. Students demonstrate an understanding of Physical Science, Life Science, Environmental Science, and Earth and Space Science by designing and facilitating student-centered activities using energy as a cross-cutting disciplinary concept. 3 hours lecture. (021884)
Grade Basis: Graded
Repeatability: You may take this course for a maximum of 3 units
Course Attributes: Upper Division
- SCED 499 Special Problems** **1-3 Units**
Prerequisite: Faculty permission.
Typically Offered: Fall and spring
 This course is an independent study of special problems offered for 1.0-3.0 units. You must register directly with a supervising faculty member. 0 hours supervision. (021538)
Grade Basis: Credit/No Credit
Repeatability: You may take this course for a maximum of 6 units
Course Attributes: Upper Division