The need for well-educated science teachers has never been greater. In response to our nation’s necessity for cutting-edge science educators, the CSU system has made a long-term commitment to increasing the number of science teachers. As a result, the Department of Science Education strives to meet those needs by offering a program geared toward an innovative future in science education. Come in to discuss your goals and get started on your journey toward a fulfilling career in science education.

**Programs**

**Undergraduate**

**Bachelor’s**

**Graduate**

**Master’s**

See Course Description Symbols and Terms ([https://catalog.csuchico.edu/academic-standards-policies/course-description-symbols-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.

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**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:** Laboratory Activity (B3); Physical Science (B1)

**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**

3 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, 2 hours discussion. (020372)

**General Education:** Laboratory Activity (B3); Life Science (B2)

**Cross listing(s):** BIOL 102

**Grade Basis:** Graded

**Repeatability:** You may take this course for a maximum of 3 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 1 unit  
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: SCED 141 or completion of GE Physical Sciences (B1).  
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 Oral Communication (A1); GE Written Communication (A2); GE Critical Thinking (A3); GE Physical Sciences (B1); GE Life Sciences (B2); GE Mathematics/Quantitative Reasoning (B4) requirements, or consent of the instructor.  
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 Scientific Inq/Quant Reason (UDB); 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: Completion of GE Written Communication (A2) requirement, 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  

SCED 342 Concepts in Earth and Space Science  
3 Units  
Prerequisite: SCED 141 or completion of GE Physical Sciences (B1); and SCED 142 or completion of GE Life Sciences (B2).  
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; Writing Course; Graduation Writing Assessment  

SCED 343 Concepts in Environmental Sciences  
3 Units  
Prerequisite: SCED 141 or completion of GE Physical Science (B1); and SCED 142 or completion of GE Life Science (B2).  
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

Science Education Department

The Faculty

Kelli M Albertson  2008
Lecturer
Master of Science CSU-Chico

Josie Allen  2023

Carolina Alvarado Leyva  2016
Associate Professor
Doctor of Philosophy Instituto Tecnologico de Monterrey

Christian K Asante  2022
Assistant Professor
Doctor of Philosophy Boston College

Julie A Monet  2007
Chair
Doctor of Education Rutgers Univ New Brunswick

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