

# SCIENCE EDUCATION (SCED)

## SCED 5004 - Elementary Science Teaching (3 Credits)

This course explores issues in elementary school science learning and teaching. Teacher candidates will develop knowledge of the nature of science and science content, engage in scientific inquiry, work to identify student conceptions, and plan and enact science instruction. Cross-listed with SCED 4004. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Repeatable. Max Hours: 9 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

Restriction: TCHR-MA plan or BMA subplan.

## SCED 5050 - Introduction to Science Teaching and Learning (2 Credits)

Focus on conceptual development, conceptual change, collaborative learning, students' conceptions of various topics in science, practical issues encountered in facilitating learning, managing the classroom, formative and summative assessment, and differentiating instruction in a collaborative environment. Seminar for Learning Assistants. Student must be serving as a Learning Assistant in the CU Denver LA program. Max hours: 2 Credits.

Grading Basis: Letter Grade

## SCED 5340 - Equity & Culture in Science Education: Local/Global (3 Credits)

This course examines literature in science education related to issues of culture and equity. Topics will be framed by an understanding of equity in diverse classrooms and how it informs research, curriculum and instruction. Cross-listed with SCED 4340 and ENVS 5340. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5350 - Issues and Trends in Science Education (3 Credits)

Explores the current issues and trends in science education related to theory, pedagogy, practices, curriculum, and other contemporary topics. Restriction: Restricted to graduate students in the SEHD or Teacher Education minors. Cross-listed with SCED 4350. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to graduate students in the SEHD or Teacher Education minors.

## SCED 5360 - Physics Teaching and Learning (3 Credits)

In this course, we will explore how people learn physics, and how physics is and can be taught. We will read literature in physics, physics education research, education, psychology, and cognitive science and apply it to your physics teaching. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5365 - Physics Teaching as Research (3 Credits)

In this course, you will research your teaching of physics, with the explicit goals of improving your teaching practice and improving student learning of physics. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5416 - Math-Science Connections: Outdoor (3 Credits)

(Primarily for pre-secondary teachers.) Explores science concepts through outdoor activities appropriate for middle-grade students. Topics include how the nature of science and mathematics informs pedagogy, national and state standards, earth science and paleontology, orienteering and map usage, water analysis, astronomy and entomology. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5500 - The Nature of Science (3 Credits)

This course is a critical exploration of science and scientific knowledge using an epistemological approach to ask (and possibly answer) questions about sociological issues in science and implications for science research, teaching and learning. Restriction: Restricted to graduate students in the SEHD or Teacher Education minors. Cross-listed with SCED 7500. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to graduate students in the SEHD or Teacher Education minors.

## SCED 5540 - Foundations of School Health Education (3 Credits)

This course is an overview of the principles of behavior theory as they relate to health education in both theory and practice. The course will examine the characteristics of effective school-based health education programs. Issues of ethnicity, culture, and race as they relate to health will be examined throughout the course. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5550 - Curriculum Materials in Health Education (3 Credits)

This course will support the application of behavior theory as it applies to specific health content knowledge and skills. Special attention will be given to the skills, instructional strategies, and techniques needed to develop a culturally responsive classroom to promote success for all learners. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5560 - Health Education Teaching Practices (3 Credits)

The course provides an overview of health education teaching and learning strategies for use in school settings. Action research will be introduced and utilized as a method to examine current teaching practices. Role-play, student assessment development, differentiation of instruction, and culturally responsive classroom practices will be examined. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5650 - Environmental Education (3 Credits)

This course links the theory and practice of environmental education to inform curricular development and pedagogical knowledge. Cross-listed with ENVS 4650 and ENVS 5650. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5660 - Energy Education (3 Credits)

Explores current energy problems. Students examine such topics as fuels from plants, fuels from wastes, fossil fuels, nuclear energy, wind energy, geothermal energy, solar energy, and energy conservation. Includes demonstration of available educational resources for grades K-12. The purpose of the course is to make technical aspects of energy accessible to the lay person. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5670 - Experiential Learning In The Parks (3 Credits)

This course guides students through their experiences in a summer field placement, using readings, discussions and other interactive tools that focus on place-based education. Max hours: 3 Credits.

Grading Basis: Letter Grade

## SCED 5690 - Curriculum Development in Place-Based Education (3 Credits)

Students in this course apply knowledge about place-based education in schools and communities for educational purposes. Max hours: 3 Credits.

Grading Basis: Letter Grade

SCED 5780 - Storytelling (1-4 Credits)

Explores the history, function, philosophy, and techniques of storytelling. This class also includes collecting, selecting, preparing, developing, and delivering stories. Research and resources are emphasized. Repeatable. Max Hours: 4 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

SCED 5800 - Curriculum Workshop for Science Teachers (0.5-4 Credits)

Opportunity to work on curricular projects and problems in the schools.

Explore various formal and informal learning environments such as study groups and after-school activities. Prereq: 18 semester hours in education and teaching experience or permission of instructor.

Repeatable. Max Hours: 36 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 36.

SCED 5840 - Independent Study (1-4 Credits)

Repeatable. Max Hours: 9 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 9.

SCED 5920 - Readings in Elementary Education (1-4 Credits)

Max hours: 4 Credits.

Grading Basis: Letter Grade

SCED 5930 - Internship in Secondary Education (3 Credits)

Max hours: 3 Credits.

Grading Basis: Letter Grade

SCED 5950 - Master's Thesis (1-8 Credits)

Repeatable. Max hours: 8 Credits.

Grading Basis: Letter Grade with IP

Repeatable. Max Credits: 8.

Additional Information: Report as Full Time.

SCED 6110 - Science and Math Curriculum Studies (3 Credits)

Students examine frameworks for curriculum design, discuss the psychological and philosophical foundations of curricula, and analyze the curriculum that they use in their own teaching. Students synthesize what teachers must do in order to effectively implement curricula. Prereq: Graduate student status. Cross-listed with SCED 7110. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Graduate level students.

SCED 6120 - International Perspectives on the Curriculum (3 Credits)

Considers schooling patterns in the U.S., the U.K., Japan, Australia, and several European countries, examining different approaches to curriculum issues in relation to social, historical, and economic factors.

Max hours: 3 Credits.

Grading Basis: Letter Grade

SCED 6840 - Independent Study (1-4 Credits)

Repeatable. Max Hours: 4 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 4.

SCED 6950 - Master's Thesis (4 Credits)

Max hours: 4 Credits.

Grading Basis: Letter Grade with IP

Additional Information: Report as Full Time.

SCED 6990 - Special Topics (1-6 Credits)

Repeatable. Max Hours: 6 Credits.

Grading Basis: Letter Grade

Repeatable. Max Credits: 6.

SCED 7110 - Science Math Curriculum Study (3 Credits)

Students examine frameworks for curriculum design, discuss the psychological and philosophical foundations of curricula, and analyze the curriculum that they use in their own teaching. Students synthesize what teachers must do in order to effectively implement curricula. Restriction: Graduate student status. Cross-listed with SCED 6110. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Graduate level students.

SCED 7500 - The Nature of Science (3 Credits)

This course is a critical exploration of science and scientific knowledge using an epistemological approach to ask (and possibly answer) questions about sociological issues in science and implications for science research, teaching and learning. Cross-listed with SCED 5500.

Max hours: 3 Credits.

Grading Basis: Letter Grade

SCED 7840 - Independent Study (1-3 Credits)

Max hours: 3 Credits.

Grading Basis: Letter Grade