

# EDSC Sci for Teachers

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## **EDSC 5131 Earth Science I**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

Earth Science I is a survey of the natural processes at work on the Earth, including processes and history of the atmosphere, lithosphere, hydrosphere, and biosphere of the Earth. Materials comprising the Earth's crust (minerals and rocks) will be examined. This course is designed to fulfill the requirement for a one-semester, science lecture and laboratory course.

**Cross Listing(s):** EDSC 5131G.

## **EDSC 5131G Earth Science I**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

Earth Science I is a survey of the natural processes at work on the Earth, including processes and history of the atmosphere, lithosphere, hydrosphere, and biosphere of the Earth. Materials comprising the Earth's crust (minerals and rocks) will be examined. This course is designed to fulfill the requirements for a one-semester, science lecture and laboratory course.

**Cross Listing(s):** EDSC 5131.

## **EDSC 5132 Earth Science II**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

Earth Science II is a survey of the natural processes at work on the Earth, including those associated with its oceans, weather and climate. The history of climate change is also covered. This course is designed to fulfill the requirement for a one-semester, science lecture and laboratory course.

**Cross Listing(s):** EDSC 5132G.

## **EDSC 5132G Earth Science II**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

Earth Science II is a survey of the natural processes at work on the Earth, including those associated with its oceans, weather and climate. This history of climate change is also covered. This course is designed to fulfill the requirement for a one-semester, science lecture and laboratory course.

**Cross Listing(s):** EDSC 5132.

## **EDSC 5151 Physics for Teachers: Mechanics and Thermodynamics**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of mechanics and thermodynamics to provide a framework for teachers to introduce or enhance a performance-based physical science curriculum in K-12 education. Students will develop an understanding of Newton's laws and many of the conservation laws. Topics include one and two dimensional motion, forces and Newton's laws, circular motion, rotational motion, momentum, energy, work, thermal properties of matter, and fluid mechanics.

**Cross Listing(s):** EDSC 5151G.

## **EDSC 5151G Physics for Teachers: Mechanics and Thermodynamics**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of mechanics and thermodynamics to provide a framework for teachers to introduce or enhance a performance-based physical science curriculum in K-12 education. Students will develop an understanding of Newton's laws and many of the conservation laws. Topics include one and two dimensional motion, forces and Newton's laws, circular motion, rotational motion, momentum, energy, work, thermal properties of matter, and fluid mechanics.

**Cross Listing(s):** EDSC 5151.

## **EDSC 5152 Physics for Teachers: Waves, Electricity and Magnetism**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of waves, electricity, and magnetism to provide a framework for teachers to introduce or enhance a performance-based physical science curriculum in K-12 education. Students will develop an understanding of sound, light, electricity and magnetism. Topics include oscillations, traveling and standing waves, sound, wave and ray optics, electric forces and fields, electric potential and electric potential energy, circuits, magnetic fields and forces, electromagnetic induction and electromagnetic waves.

**Cross Listing(s):** EDSC 5152G.

## **EDSC 5152G Physics for Teachers: Waves, Electricity and Magnetism**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of waves, electricity, and magnetism to provide a framework for teachers to introduce or enhance a performance-based physical science curriculum in K-12 education. Students will develop an understanding of sound, light, electricity and magnetism. Topics include oscillations, traveling and standing waves, sound, wave and ray optics, electric forces and fields, electric potential and electric potential energy, circuits, magnetic fields and forces, electromagnetic induction and electromagnetic waves.

**Cross Listing(s):** EDSC 5152.

## **EDSC 5161 Space Science for Teachers: Our Earth and Solar System**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of our Earth and Solar System to provide a framework for teachers to introduce or enhance a performance-based space science curriculum in K-12 education. Students will also develop an understanding of the history, methods and physics of solar system astronomy. Topics include motions of the sky, seasons, planetary geology and atmospheres, moons, asteroids and comets.

**Cross Listing(s):** EDSC 5161G.

## **EDSC 5161G Space Science for Teachers: Our Earth and Solar System**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of our Earth and Solar System to provide a framework for teachers to introduce or enhance a performance-based space science curriculum in K-12 education. Students will also develop an understanding of the history, methods and physics of solar system astronomy. Topics include motions of the sky, seasons, planetary geology and atmospheres, moons, asteroids and comets.

**Cross Listing(s):** EDSC 5161.

## **EDSC 5162 Space Science for Teachers: Stars, Galaxies and the Nature of the Universe**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of stars, galaxies and the nature of the Universe to provide a framework for teachers to introduce or enhance a performancebased space science in K-12 education. Students will also develop an understanding of the history, methods and physics used to construct the modern view of the Universe. Topics include the Sun, the Sun-Earth connection, the Milky Way, special relativity, gravity and black holes, stars and stellar evolution, galaxies and the formation of modern cosmology, dark matter, dark energy and the creation and evolution of the Universe, and the formation of the chemical elements.

**Cross Listing(s):** EDSC 5162G.

**EDSC 5162G Space Science for Teachers: Stars, Galaxies and the Nature of the Universe**

**4 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

A study of stars, galaxies and the nature of the Universe to provide a framework for teachers to introduce or enhance a performance based space science in K-12 education. Students will also develop an understanding of the history, methods and physics used to construct the modern view of the Universe. Topics include the Sun, the Sun-Earth connection, the Milky Way, special relativity, gravity and black holes, stars and stellar evolution, galaxies and the formation of modern cosmology, dark matter, dark energy and the creation and evolution of the Universe, and the formation of the chemical elements.

**Cross Listing(s):** EDSC 5162.

**EDSC 7550 Theory and Pedagogy of Science Instruction**

**3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.**

**EDSC 8400 Strat of Instruction in Science**

**3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**

**EDSC 8430 Nature of Science**

**3 Credit Hours. 3 Lecture Hours. 0 Lab Hours.**

Students explore cultural, economic, political, and social structures and discourses as they related to science, science teaching and learning and research in science and science teaching and learning. Course includes examination of how research in science and science education are framed and enacted within different theoretical frameworks.

**EDSC 8600 Science in School Curriculum**

**3 Credit Hours. 0 Lecture Hours. 0 Lab Hours.**