

# NATURAL SCIENCE (NS)

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**NS A112** 4 Units (54 lecture hours; 54 lab hours)

**Introduction to Physical Science**

**Prerequisite(s):** MATH A010.

**Grading Mode:** Standard Letter

**Transfer Credit:** CSU.

An introduction to the basic physical principles that govern the universe. This course will present an overview of the general aspects of physics and chemistry including: forces, motion, energy, electricity, magnetism, heat, waves, light, the atom, acids and bases. Satisfies part of the laboratory science requirement for the Elementary Education transfer degree.

**NS A115** 3 Units (54 lecture hours)

**Science and Technology in Music**

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

An introduction to the basic physical principles involved in the creation, transmission, and perception of sound and music. Properties of oscillations, sound waves, scales, temperament, harmony, timbre, and musical instruments are explored through scientific inquiry. Technology is utilized for both the analysis and design of music. Graded or Pass/No Pass option.

**NS A195** 2 Units (18 lecture hours; 54 lab hours)

**Special Topics in Science - Lunar Exploration**

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

Introduction to engineering design while building teamwork and communication skills and examining the engineering major offered and engineering careers. Completion of hands-on engineering design projects, preparation of short reports describing projects, and presentation of results. The specific project challenges students to explore a lunar lava tube with an eye toward its potential for human habitation. The overall goal is to build a rover and develop programs that allow an unmanned autonomous rover to navigate a model lunar lava tube. Graded or Pass/No Pass option.

**NS A196** 2 Units (18 lecture hours; 54 lab hours)

**Special Topics in Science - Exploring Mars**

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

Introduction to engineering design while building teamwork and communication skills and examining the engineering major offered and engineering careers. Completion of hands-on engineering design projects, preparation of short reports describing projects, and presentation of results. The specific project challenges students to explore the surface of Mars with an eye toward its potential for human habitation. The overall goal is to build a rover and develop programs that allow an unmanned autonomous rover to navigate the surface. Graded or Pass/No Pass option.

**NS A197** 2 Units (18 lecture hours; 54 lab hours)

**Special Topics in Science - Exploring Ocean Worlds of the Outer Solar System**

**Grading Mode:** Standard Letter, Pass/No Pass

**Transfer Credit:** CSU.

Introduction to engineering design while building teamwork and communication skills and examining the engineering major offered and engineering careers. Completion of hands-on engineering design projects, preparation of short reports describing projects, and presentation of results. The specific project challenges students to explore the ocean worlds of the outer solar system with an eye toward its potential for life. The overall goal is to build an unmanned underwater vehicle (UUV) and develop programs that allow the rover to navigate an underwater environment. Graded or Pass/No Pass option.