NS A115: SCIENCE AND TECHNOLOGY IN MUSIC

Item	Value
Top Code	190200 - Physics, General
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Associate Arts Local General Education (GE)	• Area 5 Physical and Biological Sciences, Scientific Inquiry, Life Science (OB)
Associate Science Local General Education (GE)	• Area 5 Physical and Biological Sciences, Scientific Inquiry, Life (OSB)

Course Description

An introduction to the physics that shapes our natural world through an investigation of the creation, transmission, and perception of sound and music. Fundamentals of oscillations, waves, forces, energy, and electromagnetism are explored through scientific inquiry of musical tones, harmony, timbre, acoustics, and acoustic and electronic instruments. ADVISORY: Successful completion of a course at the level of elementary algebra or Appropriate OCC math placement. Transfer Credit: CSU; UC.

Course Level Student Learning Outcome(s)

1. Describe the basic physical principles involved in the creation, transmission, and perception of sound and music, and apply these principles to solve real-world problems beyond sound and music.
2. Utilize physical principles and appropriate technology to analyze and design real-world examples of sound and music.

Course Objectives

- 1. Understand the roles of scientific inquiry, the scientific method, and technology in gaining insight into the physical principles that shape the natural world.
- 2. Explain the generation, transmission, and perception of sound and music in terms of the core physical concepts of oscillations, waves, forces, energy, and electromagnetism.
- 3. Apply the core physical concepts of oscillations, waves, forces, energy, and electromagnetism to solve real world problems beyond sound and music.
- 4. Analyze and design musical scales, harmonies, and timbres utilizing physical principles and appropriate technology.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)