

ITSC 132: AUDIO VISUAL ESSENTIALS

Foothill College Course Outline of Record

Heading	Value
Units:	1
Hours:	12 lecture, 5 laboratory per quarter (17 total per quarter)
Prerequisite:	Completion of recognized sound and communication apprenticeship or equivalent and recent employment as an installer/technician in the sound and communication industry.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Description

Covers analog and digital signals, basics of sound, microphones, amplifiers, speakers, video signals, and projection technology.

Course Objectives

The student will be able to:

- Describe sound waves, sine waves, and the electrical representation of sound
- Describe the function of transducers
- Describe the various types of microphones used for sound reinforcement
- Describe the components of a loudspeaker
- Identify the pinout of an XLR connector
- Describe the basics of computer signals
- Identify the progression of higher resolution video signals

Course Content

- Introduction (Lec)
- Analog and Digital Signals (Lec)
 - Processing and sampling
 - Bit depth
 - Bit rate
 - Compression
- Basics of Sound and How the Ear Works (Lec)
 - Frequency
 - Phase
 - Acoustics
- Microphones (Lec)
 - Types
 - Elements
- Audio Signal Levels (Lec)
 - Mic
 - Line
 - Loudspeaker
- Loudspeakers (Lec)

- Crossovers
- Sensitivity
- Frequency response
- Impedance
- Video (Lec)
 - Units of light measure
 - Ambient light
 - Video signals
 - Digital video signals
 - Display and projection technology
 - Aspect ratio
 - Projected image
- Audio Visual Lab (Lab)

Lab Content

- Work individually and in teams with basic tools of the trade, test instruments and tool safety.
- Included will be the installation of sound and/or communication devices.
- Equipment safety and safe handling practices are reviewed and applied.

Special Facilities and/or Equipment

- Audio visual cabling and equipment for hands-on lab.
- When taught via Foothill Global Access, on-going access to email software and hardware; email address.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- Results of assessments
- Results of quizzes and tests
- Discussion participation

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- Lecture
- Group discussion
- Demonstration
- Lab

Representative Text(s) and Other Materials

Grimes, Brad. *CTS Certified Technology Specialist Exam Guide*, 2nd ed. New York, NY: McGraw-Hill Education, 2013.

NOTE: This is the standard Sound & Communications textbook/workbook used for this course. Although it may not be within 5 years of the required published date, it is the most current book used when teaching this course. We will adopt the next edition, as it is published.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignments:

1. Read Certified Technology Specialist pp. 45-46: "The Inverse Square Law and Sound"

2. Read Certified Technology Specialist pp. 87-91: on video signals and bandwidth

B. Writing assignments:

1. Describe the effects of doubling your distance from the source of the sound and how that affects the level of the sound and why

2. In your own words, describe what bandwidth is and how bandwidth is in relation to video quality

Discipline(s)

Telecommunication Technology