EET-1130: BASIC AUDIO ELECTRONICS

Cuyahoga Community College

Viewing: EET-1130 : Basic Audio Electronics

Board of Trustees:
2001-04-26

Academic Term:
Fall 2024

Subject Code
EET - Electrical/Electronic Engineer

Course Number:
1130

Title:
Basic Audio Electronics

Catalog Description:
Basic DC and AC circuits, amplifier theory, audio distortion, electronic test equipment operation and soldering techniques. Designed for non-EET majors.

Credit Hour(s):
3

Lecture Hour(s):
2

Lab Hour(s):
2

Requisites

Prerequisite and Corequisite
MATH-1190 Algebraic and Quantitative Reasoning or higher level math, or departmental approval.

Outcomes

Objective(s):

1. Explain basic DC circuits.
2. Explain basic AC circuits.
3. Calculate voltage, current, resistance, instantaneous, and transient response, and time.
4. Explain amplifier theory.
5. Explain distortion types.
6. Demonstrate test equipment operation.
7. Explain amplifier frequency response characteristics.
8. Demonstrate soldering and de-soldering techniques.
9. Demonstrate wiring of various cables, connectors and pads.
10. Demonstrate basic patchbay wiring.

Methods of Evaluation:

1. Written assignments
2. Exams
3. Quizzes
4. Laboratory performance
5. Projects

Course Content Outline:

1. DC circuits
   a. Introduction
   b. Meter reading
   c. Ohms law
   d. Power
   e. Power transfer
   f. Calculator usage and problem solving
2. AC circuits
   a. Sine wave and oscilloscope use
   b. Ohms law as applied to sine waves and oscilloscope use
   c. Power
3. Voltage, frequency and distortion
   a. Simple voltage amplifiers
   b. Amplifier frequency response
   c. Distortion in amplifiers, overdriving
   d. Balanced versus unbalanced transmission
   e. Audio phasing and how to determine
   f. The decibel and VU
   g. Noise and cross talk
   h. Recognizing tones and distortion types
   i. Loudness control, sound pressure level
4. Test equipment operation
   a. Volt/ohm meter
   b. Millivolt/decibel meter operation
   c. Audio generator
   d. Oscilloscope
   e. Distortion analyzer
   f. Frequency analyzer
5. Soldering
   a. Wire preparation
   b. Soldering techniques
      i. Soldering
      ii. De-soldering
   c. Cables and pads
      i. RCA
      ii. 1/4"
      iii. XLR
      iv. TT
      v. Phase reverse adapter
      vi. Pads
   d. Patchbay wiring

Resources

Boylestad, Robert L. and Brian A. Olivari. *Introductory Circuit Analysis*. 14th ed. Upper Saddle River, NJ: Prentice Hall, 2022.

Boylestad, Robert L., and Gabriel Kousourou. *Lab Manual for Introductory Circuit Analysis*. 13th ed. Upper Saddle River, NJ: Prentice Hall, 2015.

Interactive Image Technologies Ltd. "Electronics Workbench: Electronics Lab In A Computer"

Resources Other

1. Departmental study guides.
2. Student Electronics Toolkit.

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