MTEC 51A: STUDIO RECORDING I

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	4
Hours:	3 lecture, 3 laboratory per week (72 total per quarter)
Advisory:	Not open to students with credit in MUS 80A.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Description

Introduction to fundamental concepts and techniques of mixing boards, amplifiers, microphones, signal processors and their application to both live and studio sound reinforcement. Basic introduction to computer based recording with Avid Pro Tools HD systems. Microphone placement, physics of sound as it relates to recording, sound reinforcement and studio setup techniques.

Course Objectives

The student will be able to:
A. Interpret the specifications of mixing boards, microphones, and signal processors.
B. Memorize and explain the syntax of the audio reinforcement and recording field.
C. Discuss the implementation of sound reinforcement devices into the microphone/mixing board/amplification/speaker matrix.
D. Design a sound reinforcement system based on specifications of the audio devices available.
E. Construct, configure and operate a sound reinforcement system.
F. Describe and discuss the basic principles of acoustics and the physics of sound.
G. Discuss, compare and contrast cross-cultural sound reinforcement techniques.

Course Content

A. Study and analysis of sound reinforcement equipment specifications.
1. 24/8 mixing consoles.
2. Condenser and dynamic microphones.
3. Compression, reverberation and chorus analog signal processing.
4. Cultural differences in sound reinforcement techniques.
B. Design and construction of sound reinforcement systems.
1. Connections between microphones and mixing boards using gain and equalization as a defining parameters.
2. Amplifiers and reinforcement speaker configurations for optimum room acoustics.
3. Microphone placement and direct impedance connections for acoustic and electric musical instruments.
4. Submix groups and monitor mixing/amplification.
C. Study and analysis of basic room acoustics and the physics of sound.
1. Analyzing room acoustics in both large and small scale environments.
2. Equalization settings and applications based on basic physical principles of sound.
3. Virtual and synthesized early reflection matrices.

Lab Content

Lab content includes topics such as:
A. Microphone selection and placement
B. Gain settings
C. Monitor system setup
D. Amplification calculations based on room size, etc.
E. Other items may include subjects such as number of plug ins per insert track, bus assignments for efficient recording operation, and mastering compression settings

Special Facilities and/or Equipment

A. When taught on campus:
1. 24/8 analog and digital mixing console.
2. Condenser and dynamic microphone.
3. 5 foot, 15 foot, and 30 foot XLR cables for all microphones.
4. Analog signal processors.
5. Microphone stands with boom arms for all microphones.
B. When taught via Foothill Global Access:
1. On-going access to computer with email software and capabilities.
2. Email address.
3. JavaScript enabled internet browsing software.

Method(s) of Evaluation

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

Written assignments that analyze, compare and contrast sound reinforcement device specifications, and cultural sound reinforcement considerations
Designing and assembling a sound reinforcement system for both a large and small acoustic environment
Tests on room acoustics, sound reinforcement syntax and basic physics of sound

Method(s) of Instruction

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

Lecture presentations that demonstrate fundamental concepts of audio recording equipment and engineering techniques
Classroom discussions that explore technical specifications and applications of analog and digital audio equipment including mixing consoles, microphones and signal processors
Group presentations followed by in-class discussion and evaluation

Representative Text(s) and Other Materials

Owsinski, Bobby. The Recording Engineer's Handbook, 4th ed.. 2017.

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

A. Written critiques and analyses of audio production projects including albums, soundtracks, television, video games and internet multimedia.
B. Written summaries documenting technical and artistic elements for corresponding submitted assignments and audio projects.
C. Written proposals, session logs, learning outcomes and reflections supporting submitted musical works and final master recordings.

Discipline(s)

Commercial Music