MTEC 57B: SURROUND SOUND PRODUCTION

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 81J.
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

Record, mix, and produce surround music with digital audio workstations. Calibrating surround speaker systems, recording surround music in the studio and concert hall, multichannel mixing for music and post, processing source sound elements using surround reverbs and delays, mastering music and post sessions to industry specifications, and encoding mixes into popular surround formats. Analysis of historically significant surround sound music recordings and film soundtracks.

Course Objectives

The student will be able to:
A. Configure and calibrate a professional surround sound monitoring system.
B. Record in surround using several multi-channel microphone techniques.
C. Mix in surround using a digital audio workstation and control surface.
D. Create a surround mix from a stereo master.
E. Master discrete surround or surround-encoded mixes for various delivery formats.

Course Content

A. Study and analysis of historically significant surround sound mixes since the advent of surround production.
1. Early multi-channel audio exhibitions.
2. Film and music surround mixes from the 1970s through the present day.
B. Preparing for surround production in the professional studio.
1. Physical configuration of a professional surround monitoring system.
2. Industry standards for volume, delay, and frequency calibration.
3. Bass management techniques for film and music.
C. Techniques for recording audio sources in surround.
1. Microphone selection for studio and concert recording.
2. Microphone techniques including coincident and spaced arrays.
3. Surround field recording using portable digital recorders.
D. Mixing in surround using a digital audio workstation.
1. Mixing multi-track projects for music and post-production.
2. Processing source elements using surround plug-ins.
3. Up-mixing stereo masters into surround.

E. Mastering for surround distribution.
1. Understanding industry guidelines for surround delivery.
2. Encoding surround mixes for multiple surround formats.

Lab Content

Lab content includes topics such as:
A. Monitor system setup and calibration
B. Microphone selection and placement
C. Session configuration and signal flow for music and post-production surround mixing
D. Mastering and encoding for standard surround distribution formats
E. Creation of distributable media for optical devices and download

Special Facilities and/or Equipment

A. When taught on campus:
1. Classroom with Pro Tools HD system and 16 channel audio interface.
2. Digital control surface.
3. 5 condenser microphones with stands, clips, and cables.
4. Microphone preamp with a minimum of five microphone inputs with phantom power.
5. All Avid-distributed plug-ins.
6. Plug-ins for surround encoding/decoding, up-mixing, down-mixing, and monitor management.
7. Apple Mac Pro with at least 16GB of RAM and two displays or equivalent.
8. Surround monitoring system with a minimum of five main monitors and one subwoofer.
B. When taught via Foothill Global Access:
1. On-going access to a 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 surround production techniques
Recording, mixing, and mastering surround sound in a professional studio environment
Tests on surround production terminology, techniques and standards

Method(s) of Instruction

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

Lecture presentations and classroom discussion of the techniques for producing surround sound content for music, film, and games
In-class listening to historically significant surround sound productions followed by instructor-guided interpretation and analysis
Presentations of major surround sound projects followed by in-class discussion and evaluation
Demonstration of techniques for the installation and calibration of surround sound playback systems

Representative Text(s) and Other Materials

Kuehnl, Eric, and Miles Fulwider. Surround Sound and Immersive Audio. 2020.

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

A. Written critiques of surround production projects including albums, films, and interactive media.
B. Written summaries documenting technical and creative aspects of course assignments.
C. Written proposals, session logs, learning outcomes and reflections supporting creative works and final surround master recordings.

Discipline(s)

Commercial Music