MTEC 49: HISTORY OF MUSIC TECHNOLOGY

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2021
Units:	4
Hours:	4 lecture, 1 laboratory per week (60 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU/UC
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Description

The history of music technology and sound recording from the earliest analog devices to current digital streaming services. How technological change is inseparable from economic, cultural and political change. Ways that music producers responded to different access of technologies shaped by geographical and economic factors. Historical, cultural and theoretical understanding of recorded sound, media, and digital distribution. How the digital era, laptop computers and mobile phones made home studios the dominant location for commercial record production. Hands-on experience with a variety of analog and digital audiovisual technologies. Identify hallmark sounds from commercially released recordings by historically significant audio engineers, music producers and artists.

Course Objectives

The student will be able to:
A. Evaluate the effects of music technology on history and culture.
1. Understand the interaction and unity between art, science and technology.
B. Understand how sound waves are converted into analog and digital signals.
C. Explain how performing artists transitioned from being a live band to a recording ensemble.
D. Understand how the recording studio became a laboratory for constructing sophisticated musical imaginings.
1. Compare and contrast live recordings and multitrack studio recordings.
E. Explain how audio engineers contribute to the creation of recorded music.
F. Understand the evolution of microphone technology and how this impacted the recording industry.
1. Examine how music technology changed the way vocals are experienced on recordings.
G. Understand how technology transformed the acoustic guitar into an electric instrument.
H. Consider the ways technology can be integrated into the human creative process.
1. Trace music technologies to the specific historical, social and political contexts from which they emerged.
2. Discuss how the careers of recording artists reflect the attitudes of the society.
I. Demonstrate knowledge of the history of sampling.
1. Question and analyze concepts of originality in music and other art forms.
2. Understand how changes in technology expanded the range and use of sampled music.
3. Understand what sampling is as both a musical and technological practice.
J. Explain how cassette tapes allowed the listener to record, compile and disseminate music.
K. Understand how synthesizers allowed musicians to create new sounds.
1. Explain how synthesized sounds reflected American culture throughout the 20th century.
L. Understand how amplification the guitar facilitated its emergence as a dominant instrument of popular music.
M. Analyze how high-tech companies interact with and influence the music technology industry.

Course Content

A. In the beginning of music technology
1. The big bang
2. The human voice and ear
3. Drums
4. Music boxes
B. What is sound
1. Sound waves
2. How the human ear and brain turn sound waves into sound
3. Analog recording and converting sound to digital information
C. Invention of recorded sound
1. Graphophone
2. Phonograph
3. Vinyl records
4. How the emerging youth culture of the 1950s can be understood in relation to music technology advancements
D. Invention of commercial radio
1. Effect on record and phonograph sales
2. How FCC regulations created space for the emergence of FM radio
3. How trends in audio recording technology reflect concurrent changes of broader American culture
E. Recording sound on magnet tape
1. How tape recorders revolutionized the music recording industry
2. Audio editing of recordings
F. How sound recordings reflected culture
1. The interaction between dominant culture and the counterculture that shaped the 1960s
2. How race affected an individual's access to opportunity in 1950s American South
G. Invention of multitrack recording
1. History of "sound-on-sound" and multitrack recording technologies
2. How multitracking transformed the recording studio into a creative workspace
H. Record producers
1. Ways in which a music producer can contribute to the creation of recorded music
I. Microphones
1. Development of microphone technologies
2. How recording the human voice changed in the digital era, and how that change reflects contemporary life
J. The electric guitar

1. How electrifying the guitar was a contributing factor defining the sound of rock and roll
2. The influence of electric guitar on American popular culture
K. The age of synthesis
1. How the invention of the synthesizer was a metaphor for cultural synthesis
2. Role the synthesizer played in relation to people's perceptions of technology
L. Sampling
1. Creative concepts and technological practices on which hip-hop music was constructed
2. Sampling as both a musical and technological practice
3. How sampling demonstrated a powerful creative expression of influence and a social, political statement
M. Compact cassettes
1. How the digital future, and its interactive possibilities, were prefigured by the cassette era
a. Cassettes allowed individuals to express themselves through the selection and sequencing of commercially released music
b. How the mixtape provided a creative outlet for personal expression in the pre-digital era
N. Music video
1. How the relationship between sound and image changed in the age of MTV
2. How the musicians adapted to the heightened importance of visual elements in popular music
O. The audio engineer as creative
1. The role for recording engineers
2. Recording techniques
P. MP3s and digital streaming
1. Distribution of audio as data files rather than as physical objects significantly lowered the cost of distribution
2. File sharing
Q. The business of recorded sound
1. The media conglomerates
2. The digital era
3. Home recording studios
a. The evolution of laptop computers and mobile phones to record sound

b. How the digital era has made home studios the dominant location for record production
R. Music technology as global social force
1. Encourages development of general high tech research and inventions

2. Technologists in science, art, engineering, humanities, activism, social science, policy and industry
a. Music technology to build better worlds
S. The future of music technology
1. How tech companies interact with and influence the music technology industry
2. Apple
3. Google
4. Amazon
5. YouTube

Lab Content

A. In-depth, guided study of music technology audio and video content.
B. Hands-on exploration of music technology software applications.
C. Additional opportunities are provided through critical analysis of live concerts, films and documentaries.
D. Learning is assessed in module quizzes, essays and project presentations.

Special Facilities and/or Equipment

A. Classroom computer with internet access.
B. Video projection equipment.
C. Audio sound system.
D. When taught via Foothill Global Access: on-going access to computer with email software and capabilities; internet browsing software.

Method(s) of Evaluation

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

Quizzes on weekly lesson modules
Online discussion forums
Listening assignments of online music streaming sources
Creative projects demonstrating practical application of theoretical studies

Method(s) of Instruction

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

Lecture presentations and classroom discussion on the history of music technology and its influence on society
In-class viewing of videos and feature films showing the development of music technology
Student presentations
Guest presentations from industry professionals
Guided listening exercises focused on key elements of music production technologies

Representative Text(s) and Other Materials

Santelli, Robert, and George Sir Martin. Soundbreaking: Stories from the Cutting Edge of Recorded Music, 1st ed.. 2019.

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

A. Weekly reading assignments from textbook chapters and supplementary material.
B. Online discussion forums based on course readings.
C. Writing assignments: Essays, and discussion posts, responding to questions and prompts.
D. Student research related to music technology blogs and website portals.

Discipline(s)

Commercial Music