



MERCER
COUNTY COMMUNITY COLLEGE

COURSE OUTLINE

Course Number
CMN253

Course Title
Digital Audio Production II

Credits
3

Hours:
Lecture/Lab/Other
2 lecture/2 lab

Co- or Pre-requisite
Pre-requisite: CMN153

Implementation
Semester & Year
Spring 2022

Catalog description:

This course focuses on multitrack recording techniques using state of the art Digital Audio Workstations. Topics include mastering techniques, digital signal processing, auto-tune, session management, techniques for real-time and processed audio plug-ins including reverb, delay, sampling, automation, MIDI sequencing, and virtual instruments. etc. Students will produce multilayered recordings using live talent in a studio environment.

General Education Category:
Not GenEd

Course coordinator:
Scott Hornick, 609-570-3716, hornicks@mccc.edu

Required texts & Other materials:

Equipment
Professional grade Stereo Headphone.

Course Student Learning Outcomes (SLO):

Upon successful completion of this course the student will be able to:

1. Create multi-layered, multi-track recordings using live talent on a Digital Audio Workstation. [Supports ILGs #4,10,11; PLOs #1,2,4]
2. Demonstrate conceptual and working knowledge of the basic principles of the Digital Audio Workstation through classroom discussion, written assignments, and audio laboratory exercises, and use appropriate technical and musical terminology in articulating these concepts. [Supports ILGs #1,2,4,10,11; PLOs #2,4,5,7]
3. Apply production techniques, technologies, and aesthetics related to the development of a compelling soundtrack using midi and virtual instruments. [Supports ILGs #1,2,4,10,11; PLOs #2,4,6]
4. Use and apply editing and mixing techniques associated with Digital Audio Workstations. [Supports ILG #2,4,10,11; PLOs #2,4,6]
5. Demonstrate the ability to work collaboratively with people from diverse backgrounds. [Supports ILGs #1,6,8; PLOs #2,4,5]

Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 1. Written and Oral Communication in English. Students will communicate effectively in both speech and writing.

Institutional Learning Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

Institutional Learning Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Institutional Learning Goal 6. Humanities. Students will analyze works in the fields of art, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language.

Institutional Learning Goal 8. Diversity and Global Perspective: Students will understand the importance of a global perspective and culturally diverse peoples

Institutional Learning Goal 10. Information Literacy: Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Institutional Learning Goal 11. Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for Entertainment Technology - Music Tech AAS (PLO)

1. Demonstrate basic proficiency at the piano keyboard;
2. Demonstrate a working knowledge of music theory, including note reading, scale and chord construction, and the principles of voice leading and composition;
4. Create original musical compositions and record those compositions using MIDI sequencing software, a Macintosh computer and Windows-based PC, and MIDI synthesizer keyboard;
5. Demonstrate a working knowledge of the music business, including copyright and contract law, artist management, and marketing strategies;
6. Demonstrate entry-level professional competence as a sound technician;
7. Set up sound reinforcement equipment;

Units of study in detail – Unit Student Learning Outcomes:

Unit I [The Digital Realm] [Supports Course SLO #2]

Learning Objectives

The student will be able to:

- Describe the advantages of recording and editing in the digital realm.
- Discuss the contributions of historical developments in sampling and sound editing, MIDI technology, computer I/O, and recording technology to today's Digital Audio Workstation.
- Describe the relationship between sample rate and frequency response in digital audio.
- Describe the relationship between bit depth and dynamic range in digital audio.
- Describe the main components of a Digital Audio Workstation.

Unit II [Digital Audio Workstation Basic Operations] [Supports Course SLOs #2,4]

Learning Objectives

The student will be able to:

- Explain basic session file structure.
- Power up a Digital Audio.

- Navigate the Digital Audio Workstation menu system to locate common commands.
- Operate in the main Digital Audio Workstation windows.
- Use Edit tools and Edit modes.
- Work with Time Scales, Time-based Rulers, and MIDI Controls.

Unit III **[Creating a Recording Session]** [Supports Course SLO #4]

Learning Objectives

The student will be able to:

- Choose appropriate session parameters for a project.
- Create and name tracks.
- Navigate your session for playback and editing.
- Save, locate, and open sessions on available hard drives.

Unit IV **[The Audio Recording]** [Supports Course SLOs #2,4]

Learning Objectives

The student will be able to:

- Set up hardware and software for recording audio.
- Record audio onto tracks in a session.
- Organize regions and audio files after recording to minimize clutter and optimize the session.

Unit V **[Importing Media]** [Supports Course SLOs #2,4]

Learning Objectives

The student will be able to:

- Determine whether the bit depth, sample rate, and format of an audio file are compatible with a session.
- Explain the functions of each part of the Import Audio dialog box.
- Import audio files to the Region List or to Audio tracks in the Edit window.
- Import video files to a Video track in the Edit window.

Unit VI **[The Midi Recording]** [Supports Course SLOs #1,2,3,4]

Learning Objectives

The student will be able to:

- Identify the two types of MIDI-compatible tracks that the Digital Audio Workstation provides.
- Describe the difference between sample-based operation and tick-based operation.
- Prepare a system to record MIDI data.
- Set up a virtual instrument to play MIDI data recorded on an Instrument track.
- Create a soundtrack using midi and virtual instruments.

Unit VII **[Recording and Creating a Virtual Orchestra or Ensemble using Midi and Virtual Instruments]** [Supports Course SLOs #1,2,3,4,5]

Learning Objectives

The student will be able to:

- In teams, collaboratively plan the project.
- As a team, develop the instrumentation.

- Create a multilayered session using a mix of the midi and virtual instrumentation.
- Create a Master Mix using the necessary plug-ins to shape the final sound.
- Create an audio CD of the final Product.
- Collaboratively evaluate the final product based on creativity and technical execution.

Unit VIII [Basic Editing Techniques] [Supports Course SLOs #2,4]

Learning Objectives

The student will be able to:

- Describe the difference between Absolute Grid mode and Relative Grid mode.
- Configure the Grid and Nudge values to appropriate intervals for your session and work preferences.
- Use standard editing commands and Digital Audio Workstation-specific editing commands to modify your playlists.
- Understand the effects of Edit modes on moving and trimming operations.
- Create fade-in, fade-out, and crossfade effects.

Unit IX [Basic Mixing Techniques] [Supports Course SLO #4]

Learning Objectives

The student will be able to:

- Configure Inserts and Sends to add external signal processing to your tracks.
- Configure the Sends view in the Mix window to display a single send across all tracks.
- Record and edit basic automation for your mix.
- Add plug-ins to your tracks for internal effects processing and sound shaping.

Unit X [Preparing for the Final Product] [Supports Course SLOs #2,4]

Learning Objectives

The student will be able to:

- Describe the purpose of the Save Copy in command and recognize situations in which you should use it.
- Create a copy of your session for use on a different Digital Audio Workstation system.
- Create a mixdown of tracks in your session by bouncing to tracks or bouncing to disk. Select appropriate options for your bounced files when bouncing to disk.
- Create an audio CD of your bounced files to share your results with others.

Unit XI [Recording and Creating the Final Product using Live Talent] [Supports Course SLOs #1,2,3,4,5]

Learning Objectives

The student will be able to:

- As a team, collaboratively plan the live talent recording session.
- As a team, record the live talent.
- Create a multilayered session using a mix of the live talent and virtual accompanying.
- Create a Master Mix using the necessary plug-ins to shape the final sound.
- Create an audio CD of the final Product.
- Collaboratively evaluate the final product based on creativity and technical execution.

Evaluation of student learning: [Evaluates SLOs # 1,2,3,4,5]

Achievement of the course objectives will be evaluated through the use of the following tools: Informal writing in course journals, documenting the student's reactions to course content, reflections on the various lectures, projects, and field trips, and thoughts on their own developing career interests.

- Tests - Measuring students' comprehension of music technology and audio engineering terminology, and practices.
- A group project to demonstrate the students' ability to move from session planning to final production of a multilayered musical recording using live talent.
- A group project to demonstrate the students' ability to move from session planning to final production of a multilayered musical recording using virtual instruments.
- A series of laboratories using various types of production software used for audio production.

Evaluation Tools	% of Grade
Mid Term Exam	15%
Laboratory Assignments	25%
Multilayered musical recording using live talent	25%
Multilayered musical recording using virtual instruments	25%
Course Journals, Essays	10%
Total	100%