Sound Design For Film And Video Games 2

CTE Industry Sector: Arts, Media, And Entertainment

Career Pathway: B. Performing Arts Pathway

Career Pathway Occupations: Sound Designer For Film, Sound Designer For Video Games, Sound Designer, Sound Engineer, Foley Artist

CBEDS Code: 7235

Course Description:
Second year students will build on their knowledge of producing sound effects and music for film and video games. They will build on their basic understanding of music theory by learning about more intermediate concepts such as advanced scales (chromatic, pentatonic, etc), scale modes, seventh chords, and note types. Students will learn about more complex functions in DAWs (Digital Audio Workstations) along with the Mastering process. They will be learning more complex techniques of recording sound effects and dialog for their Semester 1 final projects. They will learn about a broader set of audio functions in Unreal Engine blueprints and explore a middleware software called FMod. They will be completing a more populated online portfolio with work they have completed from Sound Design for Film and Video Games 1 and 2.

Course Hours: Monday-Friday 1:30-3:30 PM

Course Goals: Learn more intermediate music theory, learn about more intermediate concepts in Digital Audio Workstations in order to compose music, integrate sound effects and dialog, and mix and master all tracks in a sound design film project, learn more advanced concepts in Unreal Engine and Fmod.

Overall Student Objectives: Gain a more advanced understanding of different aspects, practices, and technology of the sound design sides of the film and video industries

Course Standards

Industry Sector Anchor Standards

1.0 Academics

- 1.0 Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment.

2.0 Communications

- 2.3 Interpret verbal and nonverbal communications and respond appropriately.
- 2.5 Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

3.0 Career Planning and Management

- 3.4 Research the scope of career opportunities available and the requirements for education, training, certification, and licensure.

4.0 Technology

- 4.1 Use electronic reference materials to gather information and produce products and services.
- 4.3 Use information and communication technologies to synthesize, summarize, compare, and contrast information from multiple sources.

5.0 Problem Solving and Critical Thinking

- 5.1 Identify and ask significant questions that clarify various points of view to solve problems.
- 5.2 Solve predictable and unpredictable work-related problems using various types of reasoning (inductive, deductive) as appropriate.

6.0 Health and Safety

- 6.3 Use health and safety practices for storing, cleaning, and maintaining tools, equipment, and supplies.
- 6.4 Practice personal safety when lifting, bending, or moving equipment and supplies.
- 6.6 Maintain a safe and healthful working environment.

7.0 Responsibility and Flexibility

- 7.3 Understand the need to adapt to changing and varied roles and responsibilities.
- 7.4 Practice time management and efficiency to fulfill responsibilities.

8.0 Ethics and Legal Responsibilities

- 8.4 Explain the importance of personal integrity, confidentiality, and ethical behavior in the workplace.
- 8.6 Adhere to copyright and intellectual property laws and regulations, and use and appropriately cite proprietary information.

9.0 Leadership and Teamwork

- 9.2 Identify the characteristics of successful teams, including leadership, cooperation, collaboration, and effective decision-making skills as applied in groups, teams, and career technical student organization activities.
- 9.7 Participate in interactive teamwork to solve real Arts, Media, and Entertainment sector issues and problems.

10.0 Technical Knowledge and Skills

- 10.1 Interpret and explain terminology and practices specific to the Arts, Media, and Entertainment sector.
- 10.2 Comply with the rules, regulations, and expectations of all aspects of the Arts, Media, and Entertainment sector.
- 10.3 Construct projects and products specific to the Arts, Media, and Entertainment sector requirements and expectations.

11.0 Demonstration and Application

- 11.1 Utilize work-based/workplace learning experiences to demonstrate and expand upon knowledge and skills gained during classroom instruction and laboratory practices specific to the Arts, Media, and Entertainment sector program of study.
- 11.2 Demonstrate proficiency in a career technical pathway that leads to certification, licensure, and/or continued learning at the postsecondary level.
- 11.5 Create a portfolio, or similar collection of work, that offers evidence through assessment and evaluation of skills and knowledge competency as contained in the anchor standards, pathway standards, and performance indicators.

Career Pathway Standards:

Performing Arts Pathway

B2.0 Read, listen to, deconstruct, and analyze peer and professional music using the elements and terminology of music.

- B2.1 Read a full instrument or vocal score with a direct industry connection (Film score, Philharmonic score, commercial underscore).
- B2.2 Describe how the elements of music are used.
- B2.4 Sight-read music accurately and expressively.
- B2.6 Analyze and describe the use of musical elements in a given professional work that makes it unique, interesting, and expressive.

B5.0 Apply vocal and/or instrumental skill and knowledge to perform a varied repertoire of music appropriate to music industry application.

- B5.1 Sing or play a repertoire of musical literature representing various genres, styles, and cultures with expression and technical accuracy.
- B5.1 Sing or play a repertoire of musical literature representing various genres, styles, and cultures with expression and technical accuracy.
- B5.4 Employ a variety of music technology to record, integrate, or modify a live or recorded performance to produce a new artistic product.
- B5.5 Compose music in distinct styles.
- B5.6 Compose and arrange music for various combinations of voice and acoustic and digital/electronic instruments using appropriate ranges and traditional and nontraditional sound sources.

B9.0 Explore the connection between artistic preparation and professional standards and practices

- B9.2 Demonstrate effective knowledge and skills with the audiovisual equipment and technology used in professional performance
- B9.3 Demonstrate entry-level competencies for a career in an artistic or technical field in the theatrical arts
- B9.6 Create a career plan leading to professional performance in one of the performance disciplines

Key Academic Standards from the Academic Alignment Matrix

Language Standards - LS (Standard Area, Grade Level, Standard #)

- 11-12.6. Acquire and accurately use general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression (B1.0-B9.0)

Reading Standards for Literature - RSL (Standard Area, Grade Level, Standard #)

- 11-12.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics (B4.0, B5.0, B9.0)

- 11-12.7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. ((B4.0, B5.0, B9.0)

Writing Standards - WS (Standard Area, Grade Level, Standard #)

- 11-12.6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information (B1.0-B9.0)

- 11-12.7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. (B1.0-B9.0)

- 11-12.9. Draw evidence from literary or informational texts to support analysis, reflection, and research. (B1.0-B9.0)

Engineering, Technology, and the Applications of Science - ETS

- ETS1.A: Defining and Delimiting an Engineering Problem (B1.0-B5.0)

- ETS1.B: Developing Possible Solutions (B1.0-B5.0)

- ETS1.C: Optimizing the Design Solution (B1.0-B5.0)

Links Among Engineering, Technology, Science, and Society

- ETS2.B: Influence of Engineering, Technology, and Science on Society and the Natural World (B2.0-B9.0)

Industry Standards:

Music Theory, Digital Audio Workstations, Recording, Multitrack Recording, Sound Effects, Audio/Recording Hardware, Video Game Engines

Instructional Units:

Unit 1	Intermediate Music Theory/Ear Training	Class Hrs.	31	Lab Hrs.	**31**

Description: Students will expand on their basic knowledge of music theory by learning about:

- Scales
  -Chromatic, Pentatonic Scales
  -Scale Modes (Ionian, Dorian, Phrygian, Lydian, Mixolydian, Aeolian, Locrian)
- Note Types
  -Sixteenth, Eighth-Sixteenth, Thirty-Second, Triplets
- Seventh Chords
  -Major, Minor, Half Diminished, Diminished, Dominant
  -Inversions

Ear training will help students build their skills in identifying new note types and scales by ear:

- Notes
- Scales

Anchor Standards: 1.0, 10.1
Pathway Standards: B2.1, B2.2, B2.4, B2.6
Academic Standards: Language Standard 11-12.6, Reading Standard 11-12.4

Unit 2	Review of Digital Audio Workstations (Basic Controls)	Class Hrs.	31	Lab Hrs.	**31**

Students will review the basic controls of a DAW (Digital Audio Workstation) such as:

- Transport Window (Stop, play, forward, reverse, etc)
  -Cycle (Repeat)
  -Record
- Metronome/Count-In Functions
- Adding Tracks
  -Audio, instrument
- Audio VS Instrument files
- Getting an audio signal into a DAW
  -Instruments/Microphones via Audio Interface
  -Basic Mic/Line inputs

Anchor Standards: 4.1, 4.3, 5.1, 10.1, 10.3
Pathway Standards: B5.4, B5.5, B5.6, B9.3

Academic Standards: Reading Standard 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C, ETS2.B

Unit 3	Digital Audio Workstations (Intermediate Layout and Controls)	Class Hrs.	31	Lab Hrs.	**31**

- Automations
  -Automation Types (Volume, Pan, Pitch, Velocity, Etc)
  -Adding Automations
  -Touch, Read, Write
  -Automation Panel
- Tool Bar Shortcuts
  -Number Key Shortcuts
- Quantization
  -Quantization Panel
  -Audio Warp
- Inspector Panel
  -Track Versions, Chords, Instrument, MIDI Inserts/Modifiers, Quick Controls

Unit 4	Intermediate to VST's (Virtual Instruments)	Class Hrs.	31	Lab Hrs.	**31**

Students will learn about components that VST's have such as:

- Envelopes (Attack, Decay, Sustain, Release)
- Oscillators
- LFO

And how each affects the sounds produced in them.

Unit 5	Review of MIDI	Class Hrs.	31	Lab Hrs.	**31**

Returning students will review the basics if MIDI, such as:

- Piano Roll
  -Grid layout, recording MIDI, using pencil tool along with other tools to program MIDI notes)
- Drums in MIDI
  -Using Groove Agent to program drums
- Melody Writing using MIDI
  -Chord based, Scale based, Monotone melodies

Anchor Standards: 4.1, 4.3, 5.1, 10.1, 10.3
Pathway Standards: B5.4, B5.5, B5.6, B9.3
Academic Standards: Reading Standard 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C, ETS2.B

Unit 6	Intermediate MIDI	Class Hrs.	31	Lab Hrs.	**31**

Students will learn about more complex functions in Cubase with MIDI such as:

- Piano Roll Editor
  -Controller Selection/Functions
    -Controller Lane
  -Pitch Visibility
- Quantization
  -How Quantization Works
  -Read, Write, Touch, Latch
  -Quantization Panel
  -Scale Assistant (Inspector)
- Chord Pads (Editor)

Anchor Standards: 4.1, 4.3, 5.1, 10.1, 10.3
Pathway Standards: B5.4, B5.5, B5.6, B9.3
Academic Standards: Reading Standard 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C, ETS2.B

Unit 7	Intermediate Field Recording	Class Hrs.	31	Lab Hrs.	**31**

Students will build on their knowledge of basic field recording techniques:

- Different types of field recording equipment
- How to capture field recordings from a multi-input device

Anchor Standards: 4.1, 4.3, 5.1, 5.2, 7.4, 9.7, 10.1, 10.3
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Reading Standard 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C, ETS2.B

Unit 8	Intermediate Foley	Class Hrs.	31	Lab Hrs.	**31**

Students will apply their knowledge of foley creation and recording techniques in order to produce sound effects for their final semester project scenes. They will:

- Create a detailed foley sound effects recording plan
  -What sounds they will be holding a foley recording session for
  -Make a list of foley objects they would like to use for their foley recording sessions and provide them
- Independently execute a foley recording session

Anchor Standards: 4.1, 4.3, 5.1, 5.2, 7.4, 9.7, 10.1, 10.3
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Reading Standard 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C, ETS2.B

Unit 9	Intermediate ADR (Automatic Dialog Replacement)	Class Hrs.	31	Lab Hrs.	**31**

Because returning students are required to choose a film scene as their final semester project, they will be:

- Creating a detailed plan to execute their ADR recording sessions
- Recruit a cast of actors to participate in their sessions
- Create an ADR recording session and record/direct their actors

Anchor Standards: 4.1, 4.3, 5.1, 5.2, 7.4, 9.7, 10.1, 10.3
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Reading Standard 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C, ETS2.B

Unit 10	Review of Mixing	Class Hrs.	31	Lab Hrs.	**31**

Returning students will review the basic practices and aspects of the mixing process including:

- Creating a mix session
- EQ
  -Additive/Subtractive EQing
- Compression
- Effect Chains
- Leveling

Anchor Standards: 4.1, 4.3, 5.1, 5.2, 7.4, 9.7, 10.1, 10.3
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Language Standard 11-12.6, Reading Standards 11-12.4, 11-12.7, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 11	Introduction To Mastering	Class Hrs.	31	Lab Hrs.	**31**

After reviewing mixing, students will learn about the basics of the Mastering process, including:

- STEMS
  -What they are
  -Busses with STEMS
  -Exporting STEMS out of a DAW
- Creating a Mastering session
  - Importing STEMS
  -EQ, Compression, etc.

They will use these techniques in order to create their first Mastered film scene

Anchor Standards: 4.1, 4.3, 5.1, 5.2, 7.4, 9.7, 10.1, 10.3
Pathway Standards: B5.4, B5.6, B9.3

Academic Standards: Language Standard 11-12.6, Reading Standards 11-12.4, 11-12.7, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 12	Review of Basic Unreal Engine Audio	Class Hrs.	31	Lab Hrs.	**31**

Students will review the basic components of audio in Unreal Engine:

- Blueprints
- Creating Sound Cues
- Sound Triggers

Anchor Standards: 4.1, 4.3, 5.1, 6.3, 6.6, 10.1, 11.1
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Language Standards 11-12.6, 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 13	Intermediate Unreal Engine Audio	Class Hrs.	31	Lab Hrs.	**31**

Students will expand on their basic knowledge of programming audio into Unreal Engine by learning more about:

- Sound Classes
- Audio Mixer
- Sub Mixes
- Effects

Anchor Standards: 4.1, 4.3, 5.1, 6.3, 6.6, 10.1, 11.1
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Language Standards 11-12.6, 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 14	Sound Design for Environment Terrains	Class Hrs.	31	Lab Hrs.	**31**

Students will learn how to program a change in sounds from different terrains such as dirt, gravel, grass, etc for more realistic movement transitions in a gaming level

Anchor Standards: 4.1, 4.3, 5.1, 6.3, 6.6, 10.1, 11.1
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Language Standards 11-12.6, 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 15	Review of Sound Design For Characters	Class Hrs.	31	Lab Hrs.	**31**

Students will review what they have learned about sound design for playable characters in Unreal Engine, including:

- Integrating sounds for playable characters
- Programming sounds for player movements

Anchor Standards: 4.1, 4.3, 5.1, 6.3, 6.6, 10.1, 11.1
Pathway Standards: B5.4, B5.6, B9.3
Academic Standards: Language Standards 11-12.6, 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 16	Middleware (FMod)	Class Hrs.	31	Lab Hrs.	**31**

To build on their knowledge of Middleware, students will be using a different middleware called FMod:

- Integrating sound effects for every event in a game level
- Interactive music

Anchor Standards: 4.1, 4.3, 5.1, 6.3, 6.6, 10.1, 11.1
Pathway Standards: B5.4, B5.5, B5.6
Academic Standards: Language Standards 11-12.6, 11-12.4, Engineering, Technology, and the Applications of Science ETS1.A, ETS1.B, ETS1.C

Unit 17	Online Portfolio	Class Hrs.	31	Lab Hrs.	**31**

(Second year) students will create an online portfolio consisting of their:

- Sound Design 1 Semester 1 Final Project
- Sound Design 1 Semester 2 Final Project
- Sound Design 2 Semester 1 Final Project
- Sound Design 2 Semester 2 Final Project
- Any other outstanding works

While completing their portfolio, they will create a professional resume and cover letter.

They will incorporate all of these elements to create a presentation showcasing their projects and skills to practice important interviewing skills

Anchor Standards: 3.0, 11.1, 11.2, 11.5
Pathway Standards: B9.3, B9.6
Academic Standards: Language Standard 11-12.6, Reading Standard 11-12.7, Writing Standard 11-12.7

Totals	**Class Hrs.**	**558**	**Lab Hrs.**	**279**	**Class Hrs.**	**279**

Unit 1: Upon completion of this unit, the student is able to:

1	Know the difference between Diatonic, Pentatonic, Chromatic Scales, and Scale Modes
2	Understand the different Seventh chords
3	Identify musical notes and scales by ear

Unit 2: Upon completion of this unit, the student is able to:

1	Utilize the basic functions of a Digital Audio Workstation
2	Properly set up a session in a Digital Audio Workstation
3	Understand Basic signal flow between an input device and a DAW

Unit 3: Upon completion of this unit, the student is able to:

1	Understand automations in a Digital Audio Workstation
2	Grasp more advanced features in Cubase

Unit 4: Upon completion of this unit, the student is able to:

1	Understand the importance of Envelopes
2	Manipulate Oscillators in a VST
3	Identify musical notes and scales by ear

Unit 5: Upon completion of this unit, the student is able to:

1	Utilize and comprehend the Piano Roll
2	Program drum tracks with MIDI
3	Compose melodies and chords

Unit 6: Upon completion of this unit, the student is able to:

1	Understand more advanced functions in the Piano Roll
2	Use Quantization

Unit 7: Upon completion of this unit, the student is able to:

1	Use a variety of field recording equipment
2	Capture a field recording using a multi-input recording device

Unit 8: Upon completion of this unit, the student is able to:

1	Make a detailed foley recording plan
2	Execute a foley recording session from start to finish

Unit 9: Upon completion of this unit, the student is able to:

1	Make a detailed ADR recording plan
2	Execute an ADR recording session and record/direct their actors

Unit 10: Upon completion of this unit, the student is able to:

1	Utilize basic mixing techniques to mix a sound design session
2	Understand the importance of EQ and Compression in the Mixing process
3	Identify the difference between Additive and Subtractive EQing

Unit 11: Upon completion of this unit, the student is able to:

1	Export STEMS from a mix session
2	Create a Mastering session from scratch

Unit 12: Upon completion of this unit, the student is able to:

1	Understand the role of Blueprints
2	Know how sound cues and triggers work together

Unit 13: Upon completion of this unit, the student is able to:

1	Understand the Audio Mixer better
2	Program different effects in Blueprints

Unit 14: Upon completion of this unit, the student is able to:

1	Program seamless transitions between different terrains in a game level

Unit 15: Upon completion of this unit, the student is able to:

1	Integrate sounds for playable characters
2	Program sounds for player movements

Unit 16: Upon completion of this unit, the student is able to:

1	Understand how to create events in Food

2	Integrate sound effects into events

Unit 17: Upon completion of this unit, the student is able to:

1	Create an online portfolio of all their Music Production projects
2	Develop more presentation skills

Instructional Strategies:
- Group Instruction (Powerpoint/Lecture)
- Audio/Visual (Instructional Videos, Live Demonstrations)
- Group Discussions And Projects

Instructional Materials:
- Individual Computer Stations Per Student
- Diagrams of Audio Hardware
- Audio Hardware (Microphones, Cables & Connectors, Sound Boards, Speakers, Audio Interfaces, etc)

Assessments:
- Written Tests After Each Unit
- Performance Exams Per Necessary Units
- Final Compositions/Recording Sessions

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