MISSION VALLEY REGIONAL OCCUPATION PROGRAM

Sound Design for Film and Video Games Course Outline

1. Course Title:

Sound Design for Film and Video Games

2. CBEDS Title:

Arts, Media, And Entertainment

3. CBEDS Number:

7235

4. Course Length:

Year-long course, two-semester, Ten credits each semester
Two hours per day

5. Course Description:

This course is designed for juniors and seniors in high school. Students will produce sound effects and music from scratch. Students will learn basic music theory including piano key layouts, notes, scales, chords, tempo, and melodies leading to creating sound scales in any DAW (Digital Audio Workstation). Students will learn to utilize Digital Audio Workstation's layout and functions including writing with MIDI, setting proper tempos, mixing, and mastering. Students will utilize different recording hardware including microphones, cables and connectors, handheld audio recorders, and multi-track devices. Recording techniques such as ADR (Automatic Dialog Replacement) and Foley will be taught and executed through semester one projects. Projects will expand into the second semester as students learn to implement sound effects and music into video game levels.

Course Goals: To develop knowledge of basic music and sound effect concepts, equipment, and processes. Units include: Basic music theory, Digital Audio Workstations, MIDI, Tempo, mixing and mastering, audio hardware/equipment, recording techniques, and multi-track recording. Students will learn how to use these techniques to program sounds into video game levels.

Overall Student Objective: Gain an overall understanding of different aspects, practices, and technology of the Sound and Video Game Industry

6. 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 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 rules, regulations, & expectations of all aspects of the Arts, Media, &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

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) 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, Audio/Recording Hardware

7. Instructional Units:

Unit	Content Area Skills	Hours
1	**Introduction To Music Theory And Ear Training** Description: Students will learn the basics of music theory such as keyboard layouts, notes, scales, chords, tempo, and melodies. They will learn how to write out the notation for notes and scales to aid them with writing music into a DAW later on. Students will learn to identify notes and scales by ear. **Learner Outcomes:** Identify musical notes, scales, and staffs Write music utilizing different music theory techniques Identify Notes and Scales by ear 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	60
2	**Introduction To Basic Digital Audio Workstation Functions/MIDI/VST's (Virtual Instruments)** **Description:** After an introduction to DAW's from Unit 1, students will delve into the more complex functions of a DAW such as advanced MIDI, MIDI functions, and creating tracks. They will also learn about the different track types in a DAW. Students will learn more about synthesizers' properties in-depth such as ADSR (attack, decay, sustain, release), Synth types, Envelopes and Oscillators, and Effects.	40

	Learner Outcomes: Operate any Digital Audio Workstation Differentiate between different kinds of musical tracks Anchor Standards: 4.1, 4.3, 5.1, 5.2, 7.4,9.7, 10.1, 10.3Pathway 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	
3	**<u>Sound Effects/Recording Techniques</u>** **Description:** Students will learn more about how sound effects are obtained: Sound Banks, Field Recordings, Foley, and ADR (Automatic Dialog Replacement) **Learner Outcomes:** Obtain sound effects through sound libraries and recording techniques Understand Foley and ADR 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	40
4	**<u>Introduction To Mixing</u>** **Description:** Students will learn how to mix their multi-track projects by exporting each track individually, placing them into a new session, EQing each one, applying Compression, and leveling them to ensure no peaks in the overall track volume. **Learner Outcomes:** Mix and Master all tracks within a session to create a final, polished sound design project Utilize different techniques used by professionals in the mixing and mastering process 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	40
5	**<u>Introduction To Video Game Engines/Blueprints/Sound In Games History</u>** **Description**: Students will explore video game engines such as Unreal Engine and Wwise. Students will research the history of gaming engines, along with their functions. Students will delve into how Blueprints are essential to video games and how to implement sounds into actual game levels. **Learner Outcomes:** Understand the history of Gaming Engines Navigate an Unreal Blueprint Anchor Standards: 4.1, 4.3, 5.1, 6.3, 6.6, 10.1, 11.1	40

	Pathway Standards: B5.4, 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	
6	**TRIGGERS** **Description**: Students will learn about sound triggers and the role that they play in video game audio. Students will integrate these into their blueprints to create the level's sounds. **Learner Outcomes:** Integrate sound triggers into video game levels Understand the different types of 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	40
7	**Sound Design For Characters** **Description**: Students will learn about integrating sound design for playable characters in video games. Students will explore how to add individualized sounds for different movements. **Learner Outcomes:** Integrate sound effects for video game character movements Understand the programmed movements playable video game characters have 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	40
8	**Middleware (Wise)/FMod** **Description**: Students will learn and use middleware such as Wwise that integrates sounds in between different platforms. This will include individual sound effects for every character/environment at a game level and Interactive Music. **Learner Outcomes:** Use Wwise/FMod to integrate sound effects to characters and environments Learn about integrating Interactive Music into gaming levels 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	40
9	**Online Career Preparation Portfolio**	20

	Description: Students will learn how to create an online portfolio using LinkedIn and Tumblr. Students will assemble a professional career profile to showcase all of their audio work created in the class. Students will write a professional and creative resume, cover letter, thank you letter, along with their demo reel. **Learner Outcomes:** Create a professional resume for a sound design position Create a professional portfolio showcasing their projects for potential employers 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	
	Total Hours	360

8. Instructional Strategies

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

9. Instructional Materials

- Individual Computer Stations Per Student
- Diagrams of Audio Hardware
- Audio Hardware (Microphones, Cables & Connectors, Sound Boards, Speakers, Audio Interfaces, etc)
  - Cubase
  - Pro Tools

10. Assessments

- Written Tests After Each Unit
- Performance Exams
- Final Compositions/Recording Sessions
- Portfolio

11. Certificate Competency List:

GENERAL SKILLS

- Demonstrate Workplace Basic Skills and Behaviors
- Use Effective Job Employment Skills

CAREER TECHNICAL SKILLS

- Understanding of basic music theory
- Basic understanding of DAW Functions
- Proficient in designing sound effects for film and video games
- Knowing the different types of microphones and their uses
- Mastery of Foley and ADR Techniques
- Distinguish the difference between different cable connectors and their uses (XLR, TS, TRS, RCA, MIDI)
- Basic understanding of Middleware for Video Games
- Basic understanding of Sound Triggers

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