MUSC 60A Course Outline as of Fall 2021

CATALOG INFORMATION

Dept and Nbr: MUSC 60A   Title: AUDIO RECORDING 1
Full Title: Audio Recording 1
Last Reviewed: 11/9/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	2.00	8	Lab Scheduled	35.00
		Contact DHR	1.00		Contact DHR	17.50
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00   Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable
Grading: Grade Only
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly:

Catalog Description:
This course is a comprehensive introduction to studio recording with Pro Tools. Topics include basic audio theory, the fundamentals of recording, signal flow, microphone selection and placement, mixers, patchbays, monitors, and a hands-on introduction to the Pro Tools system.

Prerequisites/Corequisites:
Course Completion or Current Enrollment in MUSC 50

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: This course is a comprehensive introduction to studio recording with Pro Tools. Topics include basic audio theory, the fundamentals of recording, signal flow, microphone selection and placement, mixers, patchbays, monitors, and a hands-on introduction to the Pro Tools system. (Grade Only)
Prerequisites/Corequisites: Course Completion or Current Enrollment in MUSC 50
Recommended:

Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
CSU GE:	**Transfer Area**		Effective:	Inactive:
IGETC:	**Transfer Area**		Effective:	Inactive:
CSU Transfer:	Transferable	Effective: Fall 2009	Inactive:	
UC Transfer:		Effective:	Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Apply a working knowledge of the art and science of sound recording to produce professional-quality digital audio with Pro Tools.

Objectives:
At the conclusion of this course, the student should be able to:
1. Design and operate an audio recording studio appropriate to the technological requirements and budgetary restraints of a given project.
2. Explain the basics of recording studio design, including acoustical and electrical issues.
3. Describe and relate the history and development of analog and digital recording technology.
4. Demonstrate a working knowledge of the equipment, terminology, and activities associated with the audio recording process.
5. Demonstrate proper selection, care, handling, and placement of microphones.
6. Demonstrate hands-on proficiency with professional recording equipment, including outboard gear, patchbays, mixing boards, amplifiers, and speakers.
7. Explain and diagram signal flow in a recording console.
8. Record digital audio tracks with Pro Tools.
9. Demonstrate professionalism in a recording studio environment.

Topics and Scope:

Taught as fully integrated lecture/ lab

I. Introduction
    A. Overview of the recording process
    B. The role of audio recording in digital media
    C. The roles of professional studio personnel
II. Studio Acoustics and Design

    A. Studio types
       1. The professional studio
       2. The audio-for-visual production environment
       3. The project studio
       4. The portable studio
    B. Control room acoustics and isolation
    C. Controlling Room Acoustics
       1. Reflection and absorption
       2. Room modes
       3. Standing waves
       4. Flutter echoes
    D. Power and grounding issues
       1. Grounding guidelines
       2. Balanced and unbalanced power
       3. Power conditioning

III. Microphones
    A. Microphone configurations
       1. Dynamic
       2. Ribbon
       3. Condenser
    B. Characteristics
       1. Directional response
       2. Frequency response
       3. Transient response
       4. Output
    C. Preamps and phantom power
    D. Microphone selection
    E. Basics of microphone placement
       1. Distant vs. close
       2. Accent vs. ambient
    F. Stereo miking techniques
       1. Side-other-side (ORTF)
       2. Mid/Side
       3. X/Y
       4. A/B
    G. Surround miking techniques
    H. Recording direct
    I. Placement techniques for specific instruments

IV. Monitoring
    A. Speaker basics
       1. Room considerations
       2. Speaker design
       3. Crossover networks
       4. Polarity
       5. Powered vs. passive
    B. Far-field vs. near-field monitoring
    C. Headphones
    D. Developing monitor mixes

V. A Brief Overview of Analog Recording

VI. The Theory of Digital Recording
    A. Digital Audio Workstations (DAWS)
    B. Technologies and formats

C. Quantization
D. Sample rate
E. Bit Depth
F. The Nyquist theorem
G. Dither
VII. A/D Convertors and Computer Audio Interfaces
VIII. The Audio Production Console
A. Channel strips
B. Busses and faders
C. Auxiliary and monitor sends
D. Pads and equalization
E. Patchbays and insert points
F. Automation
IX. Introduction to Pro Tools
A. Pro Tools systems
B. The Pro Tools file structure
C. The Pro Tools interface
1. Menu structure
2. Main windows
3. Tools
4. Edit mode features
5. Time scales and rulers
D. Working with sessions
1. Configuring sessions
2. Parameter settings
3. Adding, naming, and deleting tracks
4. The playback cursor and edit cursor
5. Saving, locating, and opening existing sessions
E. Audio recording in Pro Tools
X. Introduction to Signal Processing
XI. Standards of Professionalism in the Recording Environment

Assignment:

1. Reading (10-20 pp. per week) from the text, handouts, and/or online tutorials
2. Hands-on proficiency demonstrations on the hardware and software
3. Quizzes (3-5) on course topics (multiple choice/short answer/essay as needed)
4. Completion of required laboratory hours
5. Recording Project(s)

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Recording project(s)	Problem solving 40 - 55%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Hands-on proficiency demonstrations	Skill Demonstrations 25 - 35%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes	Exams 10 - 25%

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation	Other Category 5 - 10%

Representative Textbooks and Materials:

Modern Recording Techniques. 9th ed. Huber, David Miles and Runstein, Robert. Routledge. 2017

The Recording Engineer's Handbook. 4th ed. Owinski, Bobby. BOMG Publishing. 2017

The Mixing Engineer's Handbook. 4th ed. Owinski, Bobby. Bobby Owsinski Media Group. 2017

Pro Tools 101 (Official courseware). Cook, Frank D. Cengage Learning PTR. 2013 (classic)

Instructor prepared materials