MUSC 2427 Audio Engineering II Syllabus Addendum
McLennan Community College, Waco, TX

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WHAT IS THIS COURSE?

MUSC 2427 Audio Engineering II is the second semester of audio studies offered by the MCC Commercial Music Department. Having already covered the fundamentals of sound, acoustics, and recording equipment in the prerequisite course during semester I, this course will be an in-depth study of the operating procedures of modern audio recording. The class consists of lecture and lab sessions in which small groups of students participate in demonstrations and recording sessions. This Syllabus Addendum contains the details of how this class will be conducted, the competency assignments, and the other necessary information needed to successfully complete this class.

Be sure to visit the student link at http://www.ranchstudio.com regularly to access updated information and other helpful audio resources.

The textbook is **PRACTICAL RECORDING TECHNIQUES, Fifth edition, by Bruce and Jenny Bartlett**
Periodical reading and reports will be from *Mix magazine, EQ magazine, Recording magazine, Electronic Musician Magazine*.

ATTENDANCE POLICY:

Because of the technical nature of this course, tardiness or missed classes will seriously jeopardize your chances of success. If you experience a true emergency and must miss a class, contact the fine arts office. Your attendance will affect your grade as follows:

3 tardy = 1 absence
Accumulated absences will result in a proportional lowering of the student's grade.
25% absence will result in the student being dropped and\or failed, see the MCC official Attendance Policy.

GRADING POLICY:

A student's grade will be the cumulative total of the following criteria:
70%   Performance on the objectives.
30%   Attendance, professional attitude and conduct, Completion of live performance reviews, evaluated by instructor's observation.

The grading scale used in this class is:

A=90-100%
B=80-89%
C=70-79%
D=60-69%
F=BELOW 60%

OFFICE HOURS:

I will be glad to help you outside of class time. I have regular office hours posted outside of my office. Many times I am meeting with someone else in the studio or elsewhere during these hours, so be sure to make an appointment with me or leave a message for me with the secretary in the PAC office.

Check in at http://www.ranchstudio.com/MccStudents.htm regularly to have access to all of the forms, syllabi, and other helpful audio information.

COMPETENCY and OBJECTIVES

The following **competencies** outline the purposes of this course. The **objectives** are the specific activities that we will carry out.

Competency 1: Identify equipment needed in a recording studio; Develop a rational and strategy for equipping a recording studio.

1. **Objective:** List the basic equipment needs for making a demo CD.
2. **Objective:** List the recording system needed for recording classical music.
3. **Objective:** Summarize the components needed to interconnect the recording equipment.
4. **Objective:** visit and become familiar with the student resources for this textbook at http://booksite.focalpress.com/Bartlett/ (details on page 631)

Source:Class lecture \ lab, and Text chapter 2and 4
Evaluation: Participation, Quiz; 80% mastery required

Competency 2: Demonstrate a working knowledge of sound, signals, and studio acoustics.

1. **Objective:** Explain: sound wave creation, the characteristics of sound waves, and signal characteristics of audio devices.
2. **Objective:** Summarize the behavior of sound in rooms.
3. **Objective:** Identify methods of controlling echoes, reverb, and sound leakage.

Source:Class lecture \ lab, and Text chapter 3
Evaluation: Class discussion; 80% mastery required

Competency 3: Identify the principles of control room monitoring.

1. **Objective:**   Contrast the differences between nearfield and farfield monitoring.
2. **Objective:**   Summarize "control room acoustics".
3. **Objective:**   Identify correct speaker placement.
4. **Objective:**   Explain the cue system.

Source:Class lecture \ lab, and Text chapter 5
Evaluation: Quiz; 80% mastery required

Competency 4: Develop a working knowledge of hum prevention techniques.

1. **Objective:**   Define "g*ounding".*
2. **Objective:**   Identify methods to prevent hum pickup in audio cables.
3. **Objective:**   Explain how to prevent ground loops.
4. **Objective:**   Analyze the reduction of hum with mics and electric guitars.
5. **Objective:**   List the steps taken to isolate and stop a hum problem.

Source:Class lecture \ lab, and Text chapter 4
Evaluation: Quiz; 80% mastery required

Competency 5: Demonstrate a working knowledge of midi recording equipment and procedures.

1. **Objective:**   Identify the equipment typically used in midi recording.
2. **Objective:**   Describe the midi recording procedure.
3. **Objective:**   Demonstrate ability to record and edit midi sequences as a group.

Source:Class lecture \ lab, and Text chapter 16, class project
Evaluation: Project, 100% mastery required

Competency 6: Develop necessary knowledge to analyze and judge sound quality

1. **Objective:**   Contrast the criteria used to evaluate classical recording quality and pop-music recording quality.
2. **Objective:**   List 14 attributes of good sound in a pop-music recording.
3. **Objective:**   Summarize how to identify and isolate bad sounds in the recording process.

Source:Class lecture \ lab, and Text chapter 14
Evaluation: Quiz; 80% mastery required

Competency 7: Demonstrate understanding of microphones, mike selection, and mic accessories.

1. **Objective:**   Summarize the general traits of each transducer type.
2. **Objective:**   Summarize the traits of different polar patterns.
3. **Objective:**   Explain some criteria for microphone selection.

4. **Objective:**   Describe four main microphone accessories.
Source:Class lecture \ lab, and Text chapter 6
Evaluation: Quiz; 80% mastery required

Competency 8: Demonstrate mastery of basic microphone use skills.

1. **Objective:**   Explain the criteria for choosing to use one or multiple mics.
2. **Objective:**   Compare and Contrast the choice for close of far micing.
3. **Objective:**   Analyze the different techniques for mic placement.
4. **Objective:**   Compare four stereo mic placement techniques.
Source:Class lecture \ lab, and Text chapter 7
Evaluation: Quiz; 80% mastery required

Competency 9: Demonstrate an understanding of microphone and recording techniques for electric guitar, electric bass, and line level instruments.

1. **Objective:**   Summarize recording techniques for the electric guitar.
2. **Objective:**   Summarize recording techniques for the electric bass.
3. **Objective:**   Summarize recording techniques for the synth, drum machines, electric piano.
Source:Class lecture \ lab, and Text chapter 8
Evaluation: Quiz; 80% mastery required

Competency 10: Demonstrate an understanding of microphone and recording techniques for drum kits and percussion instruments.

1. **Objective:**   Summarize recording techniques for the drum sets.
2. **Objective:**   Summarize recording techniques for the drum sets.
Source:Class lecture \ lab, and Text chapter 8
Evaluation: Quiz; 80% mastery required

Competency 11: Demonstrate an understanding of microphone and recording techniques for acoustic guitar, grand piano, woodwinds, and vocals.

1. **Objective:**   Summarize recording techniques for the acoustic guitar.
2. **Objective:**   Summarize recording techniques for the grand piano.
3. **Objective:**   Summarize recording techniques for the saxophone and woodwinds.
4. **Objective:**   Summarize recording techniques for vocals.
Source:Class lecture \ lab, and Text chapter 8
Evaluation: Quiz; 80% mastery required

Competency 12: Demonstrate an understanding of popular digital recording formats and

editing information.

1. **Objective:** Identify the current digital audio signal formats.
2. **Objective:** Explain a DAW.
3. **Objective:** Define different types of waveform editing.
4. **Objective:** Summarize CD-R recording of audio source material.
5. **Objective:** Demonstrate editing of audio source material.

Source:Class lecture \ lab, and Text chapter 9, 13; class project
Evaluation: Class project, 100% mastery required

Competency 13: Evaluate the mixing consoles components and modes of use.

1. **Objective:** Explain the signal path of the input module.
2. **Objective:** Explain the signal path of the output section.
3. **Objective:** Explain the signal path of the monitor section.

Source:Class lecture \ lab, and Text chapter 11, 12
Evaluation: Quiz; 80% mastery required

Competency 14: Demonstrate understanding of multitrack and console operation.

1. **Objective:** List the six stages in making a multitrack recording.
2. **Objective:** Explain how to prepare the machines for recording.
3. **Objective:** Analyze the procedure for making composite tracks.
4. **Objective:** Contrast the difference between recording basic tracks and overdubs.
5. **Objective:** Explain mixdown procedures.

Source:Class lecture \ lab, and Text chapter 12, 13
Evaluation: Quiz; 80% mastery required

Competency 15: Evaluate session procedures, assembly and mastering.

1. **Objective:** Summarize the preproduction procedures and activities.
2. **Objective:** Explain procedures for setting up the studio and control room.
3. **Objective:** Summarize the procedure of digital mastering and transferring the final product to CD-R.

Source:Class lecture \ lab, and Text chapter 15
Evaluation: Quiz; 80% mastery required

Competency 16: Demonstrate the necessary skills to complete a recording session.

1. **Objective:** Working with a team of students, carry out a studio-recording project requiring the application of knowledge and skills learned from this course.
2. **Objective:** Identify client needs, allocate resources, complete necessary paperwork,

successfully complete three separate recording sessions involving tracking overdubbing, and mixing.

3. **Objective:** Perform as part of a team sharing the responsibility of the various jobs of studio personnel in actual recording sessions.

Source:Cumulative Class lectures \ labs, and Textbook.
Evaluation: 100% mastery required; Participation in all three team-recording sessions, carrying out assigned tasks applying the knowledge and skills learned from this course.

Competency 17: Identify basic operations and applications for effects and signal processors.

1. **Objective:** Summarize EQ, its types and applications.
2. **Objective:** Explain the compressor and its use.
3. **Objective:** Analyze the use of reverberation and artificial ambience.

Source:Class lecture \ lab, and Text chapter 10
Evaluation: Quiz; 80% mastery required

Competency 18: Demonstrate the necessary skills to complete a remix session.

1. **Objective:** Complete a remix of previously recorded material.
2. **Objective:** Integrate the use of recorder, mixer, and effects processors.

Source:Cumulative Class lectures \ labs, and Textbook.
Evaluation: 100% mastery required; Participation in remixes session.

Competency 19: Demonstrate an understanding of the processes and difficulties of location recordings.

1. **Objective:** Identify the several ways to record live events.
2. **Objective:** Identify the equipment needed for two-track live event recording.
3. **Objective:** Summarize the procedure for making a two track live event recording.
4. **Objective:** Demonstrate ability to record live in a class project.

Source:Class lecture \ lab, and Text chapter 17, 18; live recording project
Evaluation: Quiz; 80% mastery required

Competency 20: Review information from audio trade periodicals.

1. **Objective:** Summarize procedures, trends, or technical information presented articles from trade publications.

Source:Audio trade periodicals Mix magazine, EQ magazine, Recording magazine, Electronic Musician Magazine.
Evaluation: Written report; 80% mastery required, must be typed and grammatically correct.

Competency 21: Demonstrate professional conduct.

1. **Objective:** Demonstrate regular attendance, promptness, adequate preparation, willingness to volunteer, the ability to deal with difficulties, work with groups, and deal with adversity.

Source:Skills demonstration.

Evaluation: Classroom observation by instructor; 80% mastery required

Competency 22: Develop music business networking skills and co-lateral relationships.

Objective: Practice regular attendance to other artist's live performances, and share your experiences with other music business people. Each student is required to attend and review at least five live performances of MCC students/faculty each semester. You must hand in at least five written reviews of the concerts or performances that you attend. Details are at http://www.ranchstudio.com/MccStudents.htm

Source:Skills demonstration.

Evaluation: 5 Reviews handed in to instructor; 80% mastery required

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Students in the McLennan Community College Music Industry Careers Audio Technology Program are learning to operate Digital Audio Work stations (DAW's), as well as analog devices. They are required to do the majority of their out-of-class work and projects on a DAW capable computer. In order to complete their assignments, they must have access to a DAW capable computer outside of the classroom. The need for a personal computer is required in order to complete the assignments. It is recommended that the DAW audio computer should be dedicated to the audio recording function, and not used for other non-audio tasks, in order to maximize operation reliability and speed.