

MUSC 1427 – Audio Engineering I

Audio Recording Program / Northwest College

CRN 57828 – Fall 2011

Spring Branch Campus – PAC 418 | Saturdays 9-3pm

Instructor: Bryan Ferguson,

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Course Description:

Overview of the recording studio, includes basic studio electronics and acoustic principles, waveform properties, microphone concepts and miking techniques, studio set up and signal flow, recording console theory, signal processing concepts, recorder principles and operation, and an overview of mixing and editing. Students are required to attend additional lab hours outside of class.

Prerequisites: None

Course Goal:

Have audio engineering students begin to explore and conceptualize the world of the modern recording studio.

Student Learning Outcomes:

The student will be able to:

1. Identify acoustic and electronic concepts.
2. Describe waveform properties
3. Explain microphone characteristics and discuss their placement.
4. Describe studio set-up and signal routing.
5. Explain console and recording machine operation techniques.
6. Discuss basic studio production procedures.

Learning Objectives:

Student will:

1. Define basic acoustical principles such as absorption, diffraction, diffusion, reflection, resonance and transmission.
2. Recognize psycho-acoustic phenomena such as Haas effect, binaural localization, equal loudness principle, etc.
3. Identify the parts of the ear.
4. Identify the range of human hearing. Identify conditions that cause hearing loss, and practice methods to prevent hearing loss.
5. Identify common standards for microphone level and line level audio signals.
6. Identify electronic specifications such as frequency range, frequency response, and dynamic range, noise floor, signal to noise ratio and headroom. Discuss the impact of these factors on sound quality.
7. Graph and describe the basic properties of sound waves such as frequency, amplitude,

envelope, harmonic content, velocity, phase and wavelength.

8. Describe and predict the properties of sound based on computer generated graphic wave displays.
9. Generalize about how waveform properties can be manipulated in the recording studio.
10. Demonstrate proper use of terminology associated with microphones including manufacturers, construction, models, and sonic properties.
11. Identify common microphone polar patterns.
12. Demonstrate proper use of microphones so they are on-axis to a sound source.
13. Explain proper application of microphone accessories such as pads, filters, screens, mounts, clips, stands and cables.
14. Summarize proper use of both single and stereo microphone placement techniques.
15. Identify common equipment components used in the recording studio
16. Describe how equipment systems in the recording studio are commonly integrated.
17. Describe the basic features of common studio devices such as cue boxes, headphones, and direct boxes.
18. Demonstrate proper use and connection of headphones, direct boxes and cue boxes.
19. Identify common multi-track digital recorders used in the recording studio
20. Demonstrate proper operation of multi-track recorders such as track arming, transport controls and input monitoring.
21. Identify common styles of mixing consoles from various manufacturers.
22. Operate the basic controls on mixing consoles such as faders, pan pots, mutes, preamplifiers, PFLs and equalizers.
23. Demonstrate proper gain staging techniques using equipment meters.
24. Demonstrate proper track assignment techniques.
25. Demonstrate proper use of terminology associated with the recording, reproduction and manipulation of sound.
26. Summarize the responsibilities of common employees of a large recording studio.
27. Identify common steps involved in studio production.
28. Estimate timetables and costs involved in studio production.
29. Describe the operation of basic studio effects processors such as equalizers, compressors, gates, reverberators, delays and pitch shifters.
30. Describe common applications of each basic studio processor such as equalizers, compressors, gates, reverberators, delays and pitch shifters.

SCANS or Core Curriculum Statement:

The following workplace competencies and foundation skills have been designed into this courses curriculum:

- Participate as a team member
- Works with diversity
- Selects technology
- Reading

Instructional Methods:

MUSC 1427 is a required course for all audio recording majors.

The class will be comprised of a variety of instructional methods including lectures, class

discussions, computer-based lab assignments, and hands-on demonstrations.

As a student wanting to learn about the field of audio recording, it is your responsibility to read the textbook, submit assignments in a timely fashion, study for exams, and participate in classroom activities, and attend class.

Student Assignments:

Students will be required to complete the following assignments during the semester:

In-class Quizzes:

Quizzes will be given at the beginning of most classes. These quizzes will be comprised of multiple choice, true/false, and short answer questions. Students will have the first fifteen minutes of class to complete each quiz. Students arriving after that time will not be allowed to make-up the quiz for that day. The lowest quiz grade will be dropped at the end of the semester.

Midterm Exam:

Fifty multiple-choice questions covering chapters 1, 2, 3 and 5. All students will need a scantron to complete the test.

Final Exam:

Fifty multiple-choice questions covering chapters 4, 6 and 7. All students will need a scantron to complete the test.

Listening Exercises:

A variety of ear training exercises will be performed in class. Additional exercises will be assigned as homework. These exercises will be graded solely on the basis of student participation and completion.

Hands on Exercises:

A variety of hands on exercises will be performed in class. Additional exercises may be given as homework.

Assessments:

In-class Quizzes 25%

Midterm Exam 25%

Final Exam 25%

Listening Exercises 10%

Hands on 15%

Instructional Materials:

Modern Recording Techniques, by Huber & Runstein

Optional: Tin To Gold, Audio CD, by Scott Gehman

HCC Policy Statement – ADA

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office.

HCC Policy Statement – Academic Honesty

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion means the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook)

Class Attendance

Class Attendance - **It is important that you come to class!** Attending class regularly is the best way to succeed in this class. Research has shown that the single most important factor in student success is attendance. Simply put, going to class greatly increases your ability to succeed. You are expected to attend all lecture and labs regularly. You are responsible for materials covered during your absences. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences.

If you are not attending class, you are not learning the information. As the information that is

discussed in class is important for your career, students may be dropped from a course after accumulating absences in excess of 12.5% hours of instruction. The six hours of class time would include any total classes missed or for excessive tardiness or leaving class early.

You may decide NOT to come to class for whatever reason. As an adult making the decision not to attend, you do not have to notify the instructor prior to missing a class. However, if this happens too many times, you may suddenly find that you have “lost” the class.

Poor attendance records tend to correlate with poor grades. If you miss any class, including the first week, you are responsible for all material missed. It is a good idea to find a friend or a buddy in class who would be willing to share class notes or discussion or be able to hand in paper if you unavoidably miss a class.

HCC Course Withdrawal Policy

If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of withdrawal. Before you withdraw from your course; please take the time to meet with the instructor to discuss why you feel it is necessary to do so. The instructor may be able to provide you with suggestions that would enable you to complete the course. Your success is very important. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than SIX total course withdrawals throughout their educational career in obtaining a certificate and/or degree.

To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your professor may “alert” you and HCC counselors that you might fail a class because of excessive absences and/or poor academic performance. It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

If you plan on withdrawing from your class, you MUST contact a HCC counselor or your professor prior to withdrawing (dropping) the class for approval and this must be done PRIOR to the withdrawal deadline to receive a “W” on your transcript. **Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online registration calendars, HCC schedule of classes and catalog, any HCC Registration Office, or any HCC counselor to determine class withdrawal deadlines. Remember to allow a 24-hour response time when communicating via email and/or telephone with a professor and/or counselor. Do not submit a request to discuss withdrawal options less than a day before the deadline. If you do not withdraw before the deadline; you will receive the grade that you are making in the class as your final grade.

Repeat Course Fee

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice, are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course

withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

Instructor Requirements:

As each instructor sees fit.

Program/Discipline Requirements:

None for this course.

HCC Grading Scale:

90 - 100 = A

80 -89 = B

70 -79 = C

60 -69 = D

Below 60 = F