

MUSC 1427 – Audio Engineering I

Audio Recording Program / Northwest College CRN 79650 – Fall 2012 Spring Branch Campus –Rm#704 | Mon, Wed & Fri 9-11am 6 Hour Lecture, 1 Hour Lab course/ 112 Contact Hours per semester / 16 weeks *This course is web-enhanced and has an online component.

Instructor Aric Nitzberg Learning Web Page: <http://learning.hccs.edu/faculty/aric.nitzberg>
Eagle Online Web Log-in: <https://hccs1.mrooms3.net/login/>

Office Hours Mon, Wed Fri 3-5pm and by appointment in Spring Branch PAC Rm#412

Course Description

This course is designed to introduce students to the techniques of sound production including basic recording, mixing and editing techniques. Concepts to be covered include: session procedures, sound waves, acoustics, signal flow, mixer operation, and effects processing.

Course Goal

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

Prerequisites

None. This course requires no previous knowledge or skills in audio recording, music, sound reinforcement or computers.

Student Learning Outcomes:

1. The student will be able to **Identify acoustic and electronic concepts.**
 - a. Describe basic aspects of human hearing in including frequency range and amplitude characteristics
 - b. Identify symptoms of hearing loss and methods of prevention.
 - c. Explain the six basic acoustic principles: reflection, refraction, diffusion, absorption, diffraction, and resonance.
 - d. Identify the basic components of sound – direct sound, early reflections, and reverberation, as well as related qualities of acoustics space such as flutter echo, live, and dead spaces.
2. **Describe waveform properties**
 - a. Demonstrate how to graph various properties of a sound wave including frequency, amplitude, phase, and harmonic content.
 - b. Describe the basic characteristics of sound waves: frequency, amplitude, harmonic content, velocity, wavelength, phase, and envelope.
 - c. Understand various amplitude-related concepts such as dynamic range, noise floor, signal-to-noise-ratio, and headroom.
3. **Explain microphone characteristics and placement.**
 - a. Describe basic categories of microphone design, such as moving coil, ribbon, and condenser, and their properties.
 - b. Discuss the uses of standard close and distant miking techniques used in audio production.
 - c. Identify the function of various microphone related accessories such as pop filters, lo-cut filters, phantom power, and polar pattern selectors.
4. **Describe studio setup and signal routing.**
 - a. Demonstrate how to connect various pieces of audio equipment including microphones, A/D converters, mixers, and speakers.
 - b. Demonstrate basic time, frequency, and amplitude domain signal routing and processing.

- c. Identify the basic features of common signal processors such as compressors, reverbs, equalizers, and delays.
- 5. Identify basic studio recording procedures.**
 - a. Utilize effective file management strategies for an audio engineering project.
 - b. Describe the proper use and setup of a click track.
 - c. Identify common studio documents such as take sheets, track sheets, and session logs.
 - 6. Discuss various career paths open to an audio engineer.**
 - a. Describe the various careers available to an audio engineer in markets such as music production, radio and television broadcast, live event production, animation, film, and video game development.
 - b. Discuss the relative job markets and pay scales of various audio engineering career paths.
 - 7. Employ DAWs (Digital Audio Workstations) to complete basic audio engineering tasks such as recording, editing, processing, and mixing.**
 - a. Understand the basic operation of the Apple/Mac operating system including navigation, file management, search engine, and use of Internet resources.
 - b. Describe the differences between linear and nonlinear, and real-time and nonreal-time processing.
 - c. Demonstrate basic editing processes such as cutting, pasting, cross-fading, and arranging of audio files.
 - 8. Evaluate various aspects of musical productions including genre, production quality, spatial positioning, frequency, and dynamics.**
 - a. Describe typical musical qualities of various popular musical genres.
 - b. Analyze music productions for harmonic and dynamic relationship between various elements of a mix.

SCANS or Core Curriculum Statement:

SCANS Skills: The Department of Labor has identified skill sets that U.S. employers want most in entry level employees. Houston Community College is determined to prepare you with the knowledge and skill you need to success in today's dynamic work environment. Towards this end, the following workplace competencies and foundation skills have been designed into this courses curriculum.

· Listening · Self-esteem Students will listen recordings of equalizers, compressors, gates and reverberator s to identify their settings by ear. Students will prepare a portfolio CD of their recordings to play for potential clients and employers. Their success will be determined by the performance on listening quizzes and the quality of their portfolio.

Houston Community College Mission Statement:

The Houston Community College System is an open-admission, public institution of higher education offering academic preparation, and lifelong learning opportunities that prepare individuals in our diverse communities for life and work in an increasingly international and technological society.

Instructional Materials

1. Required: David Miles Huber & Robert Runstein, *Modern Recording Techniques*, 7th ed.
2. Stereo headphones
3. CD-Rs as needed
4. USB Flash Drive (2 gig minimum)

Assessments:

Attendance 10%
Labs 40%
Listening Assignments 10%
Mid Term 20%
Final Exam 20%

Final grades are based on the following system:

A 100-90

B 89-80

C 79-70

D 69-60

F Below 60

Outstanding level of performance. Indicates mastery of all course objectives, consistently does excellent work with skill, thoroughness, and consistent strong application of knowledge gained during the course. Assignments are turned in on time, and student is always present for class and participates in class activities. High level of performance. Indicates above average work, mastery of almost all course objectives, and good application of knowledge gained during the course.

Assignments are typically turned in on time and student is consistently present for class and participates in class activities.

Satisfactory level of performance. Indicates average work and mastery of many of the course objectives. Often this grade indicates some inconsistency in class attendance, lack of participation in class activities, and failure to complete assignments on time.

Needs improvement in performance. Indicates below average work and mastery of few of the course objectives. Often this grade indicates inconsistent class attendance, lack of participation in class activities, and failure to complete all assignments.

Unsatisfactory level of performance. Indicates work far below the acceptable standard and lack of mastery of course objectives. This grade is almost always accompanied by recurring chronic absenteeism, serious lack of participation in the classroom, and consistent failure to complete assignments.

Instructional Methods:

The class will be comprised of a variety of instructional methods including lectures, class discussions, hands-on demonstrations, group projects, individual assignments and labs.

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, participate in classroom activities, and attend class.

Student Assignments:

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

Labs 1-10

Quizzes 1 and 2

Midterm Exam: Midterm exam will be in 2 parts, Written and Hands On. Written will consist of multiple choice, true/false and/or fill in the blank questions. Hands on will require students to demonstrate skills covered to date on the Audio recording software.

Final Exam: The final exam also be in 2 parts, Written and Hands On. The final exam will be comprehensive, drawing from material covered over the entire semester.

Make-up policy

Late assignments will be deducted ten points per class period until the assignment is turned in.

Make-ups for quizzes and exams are not typically given. If you know you will be absent for an exam day please discuss an alternate testing time with the instructor ahead of time, *not after the fact*.

'Incomplete' final grades are only appropriate if unusual circumstances cause a student to miss one or two major assignments or tests. An 'Incomplete' may only be given if the student and the instructor discuss and agree to this option. The student is responsible for obtaining and finishing the missing work by the next regular semester.

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 mean 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)

Instructor Requirements:

- Cell phones and pagers should be turned off or placed on silent during class time. If you feel strongly that you need to take a call or send a text, please do so outside the classroom.
- Use of laptops and other mobile devices for note taking is acceptable as long as these devices are not used for any other non-educational purpose.
- Use of cell phones or any other electronic devices during quizzes or tests will result in a zero for that assignment.
- No audio or video recording devices of any kind may be used in class without prior written permission of the instructor.
- Be respectful of others and their opinions at all times. Some of our peers may feel very strongly about some of the topics to be covered in this course. We are all entitled to a safe environment in which to express ourselves and explore ideas as a group.
- Try your best to arrive on time each day. If you do arrive late, try not to be disruptive as you enter the classroom

Class Attendance

It is important that you come to class! Regular attendance is the single most important factor in student success. You are expected to attend all lectures and labs regularly. Class attendance is checked daily, usually through the use of a sign-in sheet. It is your responsibility to ensure that your name appears on the sign-in sheet. If it does not, you are considered absent for that class.

Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. Students may be dropped from a course after accumulating absences in excess of twelve hours of class time, which equals six classes. For the purposes of measuring attendance, three tardies will be counted as one absence. The twelve hours of class time includes any total classes missed, 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 tends 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 in class who is willing to share class notes or is able to hand in a paper for you if you cannot avoid missing a class.

The attendance portion of your final course grade is based on the following scale:

Absences GradeLetter

0 100 A 1 90 A 2 80 B 3 70 C 4 60 D 5 50 F 60F

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

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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.

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.

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

16 Week Course Calendar*

* Although I will do my best to adhere to this calendar, due to the possibility of unforeseen events, these dates should be viewed as tentative and may be subject to change during the semester.