COURSE OUTLINE

New Course Title

ETT 209	Sound Design for the Entertainment Industry	3
Course Number	**Course Title**	**Credits**

1	4	0	0	15 week
Class or Lecture Hours	Laboratory or Work Hours	Clinical or Studio Hours	Practicum, Co-op, Internship	Course Length (15 week, 10 week

Performance on an Examination/Demonstration
(Placement Score (if applicable); minimum CLEP score)

Alternate Delivery Methods
(Online, Telecourse [give title of videos])

Catalog Description:
Examines audio production techniques, technologies, and aesthetics related to the development of a compelling soundtrack for theatre, television, radio or WEB. Training in all phases of digital sound recording, editing, and mixing. Students work with location and field recording equipment, advanced editing and mixing techniques associated with digital audio workstations.

Prerequisites:
CMN153 or permission of the coordinator

Co requisites:

Last Revised: 04/09/2009

Course Coordinator: **Robert Terrano, Assistant Professor**
Office: ET110
E-mail: terranor@mccc.edu

Required Materials:

Kaye, Deena, James LeBrecht. Sound and Music for the Theatre: The Art and Technique of Design (2nd edition). Elsevier Science & Technology Books, September 1999.

Stage Research (2008). *Theatrical Design Interactive - Sound Design* [DVD]: Northfield, Ohio: Stage Research, Inc. Interactive Multimedia.

Important Health and Safety Information

As an entertainment technology student you are involved in an industry that is dependent upon good hearing. Please protect yours! Tests have indicated that if you are rehearsing, recording, performing, listening to recorded music (especially through portable equipment) and/or attending gigs, concerts and nightclubs, it is very likely that you are experiencing daily sound levels well above those recommended for good aural health.

Damage to your hearing is not reversible. Avoid noisy environments as much as possible. Wear earplugs for your protection. Disposable earplugs are readily available or you can see an audiologist to have specialized hearing protection devices designed specifically for you.

Students with Disabilities

Any student in this class who has special needs because of a disability is entitled to receive accommodations. Eligible students at Mercer County Community College are assured services under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973.

If you believe you are eligible for services, please contact Arlene Stinson, the Director of Academic Support Services. Ms. Stinson's office is LB221, and she can be reached at (609) 570-3525.

Academic Integrity

As per the student handbook, "A student will be guilty of violating academic integrity if he/she (a) knowingly represents the work of others as his/her own, (b) uses or obtains unauthorized assistance in the execution of academic work, or (c) gives fraudulent assistance to another student." Students should read the Academic Integrity policy in the MCCC Rights and Responsibilities Student Handbook. ***Academic Dishonesty will result in failure of this course.***

Equal Opportunity Policy

Mercer County Community College is committed to equal opportunity and affirmative action. Discrimination on the basis of race, creed, color, national origin, ancestry, age, gender, affectional or sexual orientation, marital status, familial status, liability for service in the Armed Forces of the United States, nationality, political views, religion, disability unrelated to job or program requirements or any other characteristic protected by law is prohibited.

Questions regarding the equal opportunity policy and compliance statement may be directed to the Affirmative Action Officer, West Windsor Campus, (609) 586-4800, ext. 3270.

Available Resources:

Books

Deny, Roger. *PC Audio Editing*, Focal Press, March 2000.

Johnston, lan. *Measured Tones*, Adam Hilger/lOP Publishing 1989

McLeish, Robert. *Radio Production*, 2nd Edition, Focal Press 1994

Moore, Brian C. J. *An Introduction to the Psychology of Hearing*, Academic Press, 1989.

Nisbett, Alee. *The Use of Microphones*, 3rd Edition, Focal Press, 1989.

Rumsey, Francis. *Digital Audio Operations*, Focal Press, 1991.

Rumsey, Francis. *MIDI Systems and Control*, Focal Press, 1990.

Talbot-Smith, Michael (ed.). *Sound Engineer's Pocket Book*, Focal Press, 2001.

THEATRE-RELATED BOOKS

Carter, Paul, *The Backstage Handbook*; Shelter Island, NY: Broadway Press, 1988.

Huntington, John, *Control Systems for Live Entertainment*, Boston: Focal Press, 1994.

Huber, David Miles and Robert A. Runstein, *Modern Recording Techniques*, Third Edition, Indianapolis: Howard W. Sams & Company, 1989.

Huber, David Miles, *Microphone Manual— Design and Application*, Indianapolis: Howard W. Sams & Company, 1998.

Walne, Graham, *Sound for the Theatre*, NY: Theatre Arts Books / Routledge, 1990.

Woram, John M., *Sound Recording Handbook*, Indianapolis: Howard W. Sams and Company, 1989.

ACOUSTICS AND MUSIC BOOKS

Davis, Gary and Ralph Jones, *Sound Reinforcement Handbook*; Second Edition, Milwaukee, WI: Hal Leonard Publishing Corporation, 1989.

Giddings, Philip, *Audio Systems— Design and Installation*; Carmel, IN: MacMillan Computer Printing, 1990.

Huber, David Miles and Robert A. Runstein, *Modern Recording Techniques*, Third Edition, Indianapolis: Howard W. Sams & Company, 1989.

Huber, David Miles, *Microphone*

SUGGESTED PERIODICALS

Electronic Musician, Intertec Publishing, 6400 Hollis Street, Ste. 12, Emeryville, CA 94608

Entertainment Design, formerly *TCI* and *Theatre Crafts*, Intertec Publishing, 32 West 18th Street, New York, NY 10011-4612

EQ!, Miller-Freeman PSN, Inc., 460 Park Avenue South, 9th Floor, New York, NY 10016

Lighting Dimensions, Intertec Publishing, 32 West 18th Street, New York, NY 10011-4612

Live Sound International, HUGE Press, P.O. Box 577, Shawnee Mission, KS 66201

Mix, Intertec Publishing, 6400 Hollis Street, Ste. 12, Emeryville, CA 94608

Pro Sound News, Miller-Freeman PSN, Inc., 460 Park Avenue South, 9th Floor, New York, NY 10016

Websites
Handout for students.

Course Goals.

Upon Successful completion of this course, the student will be able to:

1. Demonstrate conceptual and working knowledge of the basic principles of the behavior of sound in various environments through classroom discussion, written assignments, and audio laboratory exercises, and use appropriate technical and musical terminology in articulating these concepts; (GE Goals 1, 3 and 4, MCCC CS Goals A, B and D)
2. Apply production techniques, technologies, and aesthetics related to the development of a compelling soundtrack for theatre, television, or WEB. (GE Goals 1, 4, MCCC Goals A, B, C)
3. Use and apply advanced editing and mixing techniques associated with digital audio workstations. (GE Goal 4, MCCC Goals B, E)
4. Work on teams, teach others, serve customers, negotiate and work well with people from culturally diverse backgrounds. (GE Goal 8, MCCC CS Goal F and G.)

General Education Knowledge Goals

- **Goal 1. Communication.** Students will communicate effectively in both speech and writing.
- **Goal 2. Mathematics.** Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.
- **Goal 3. Science.** Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.
- **Goal 4. Technology.** Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.
- **Goal 8. Diversity.** Students will understand the importance of a global perspective and culturally diverse peoples.

MCCC Core Skills

- **Goal A. Written and Oral Communication in English.** Students will communicate effectively in speech and writing, and demonstrate proficiency in reading.
- **Goal B. Critical Thinking and Problem-solving.** Students will use critical thinking and problem solving skills in analyzing information.
- **Goal D. Information Literacy.** Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.
- **Goal E. Computer Literacy.** Students will use computers to access, analyze or present information, solve problems, and communicate with others.
- **Goal F. Collaboration and Cooperation.** Students will develop the interpersonal skills required for effective performance in group situations.
- **Goal G. Intra-Cultural and Inter-Cultural Responsibility.** Students will demonstrate an awareness of the responsibilities of intelligent citizenship in a diverse and pluralistic society, and will demonstrate cultural, global, and environmental awareness.

Unit Objectives

Unit I: The Evolution and Foundation of Sound Design

The student will be able to:

- Explain in his/her own words the evolution of sound design by writing a short essay. (CG1, GA, MCCC A)
- Describe the function and intent of sound. (GG1)
- Explain in writing the theatrical forms/styles of Sound design. (CG1)
- List and describe the conventions of music and effects. (CG1)
- Identify and describe the characteristics of the sound cue. (CG1, CG2)

Unit II The Physics of Sound and Hearing

The student will be able to:

- Explain in his/her own words the following terms; sound waves, cycle, reverberation, amplitude, frequency, wavelength, the sine wave, resonance, sound spectra, phase and interference, and other elated terms. (CG1)
- Explain and analyze the relationship between the fundamental frequency, harmonics, wave form, and phase and how it relates to the musical note and what we hear. (GB, CG1)
- Describe the physical structure of the ear including attributes of the ear such as frequency response, loudness compensation, the time line of hearing, perception of intensity and direction.
- Explain the concepts of the missing fundamental, frequency loudness warp, the precedence effect. Analyze the impact on what one hears given these characteristics. (GB, CG1)

Unit III: Developing the Concept and Design

The student will be able to:

- Interpret and analyze a script written for stage, television, radio or film. (CG 1 and 2)
- Collaborate with the director to ascertain the director's interpretation of the script. (GG 1,2,4, MCCC F)
- Choose sound effects and or music. (CG2)
- Identify the various design elements that impact on creating the sound environment. (CG1,2,3)
- Identify and use music and sound effects resources. (CG 1,2,3)
- Obtain right clearances on any music or sound effects. (CG 4)

Unit IV: Microphones

The student will be able to:

- Identify the different design types of microphone and describe the major characteristics of each type including their structure. (CG1 &2)
- Identify and describe the basic directional patterns of microphones and choose which type is best for different types of music, room acoustics and applications. (GB; CG 1,2, 3 and 4)
- Interpret pickup pattern variations by frequency using various charts and graphs published by the manufacturer. (GB; CG 1,2, 3 and 4)
- Write clear instructions on the effective use of microphones for talent. (GA, GB; CG 1,2, 3 & 4)
- Describe the differences between balanced and unbalances microphone circuits and choose the proper type for various applications. (GB; CG 1,2, 3 and 4)

- Identify and describe all issues of microphone impedance, sensitivity and distortion. Choose the appropriate microphone for a given application and level match it to the correct input. (GB; CG 1,2, 3 and 4)
- Write a one page paper of wireless microphones, their types, uses and applications. (GA, GB; CG 1,2, 3 and 4)

Unit V: Equalizers and Signal Processing

The student will be able to:

- Identify and describe the basic equalizer design types. (Fixed, cut-only, fixed frequency, sweep able, parametric, etc.) (CG1&2)
- Interpret frequency response curves to assist in setting up house and channel equalization. (GB, CG1,2,3&4)
- Describe each of the characteristics of compressors and limiters and identify scenarios that require their use. (CG1&2
- Connect and properly adjust built-in and external compressors and limiters. . (GB, CG1,2,3&4)
- Describe the characteristics of delay/echo and reverb units and identify each of the parameters required for adjustment.
- Connect set-up and use delay/echo and reverb units. . (GB, CG1,2,3&4)
- Compare and contrast analog and digital reverb and echo units. (CG1&2)
- Use equalizers and signal processing units during live performances. (GB, CG1,2,3&4)

Unit VI: Developing the Sound Plot and Building Cues

The student will be able to:

- Create and use a sound plot. (CG 1,2,3)
- Use and apply the correct terminology when creating a sound Plot. (CG 1,2,3)
- Organize the work flow when preparing to build the cues. (CG 2)
- Identify and gather effects and music for the cues. (CG2)
- Record your own cues. (CG3)
- Assess performance conditions. (CG 2,3)
- Identify the hardware and software for recoding the cues. (CG2)

Unit VII: Mixing and Recording

The student will be able to:

- Choose the correct microphones and equipment to record a live performance. (CG 3)
- Mix a live performance of a band, orchestra or other musical group. (CG 2,3)
- Record a live performance of a band, orchestra of other musical group to hard disk, CD, DVD, tape, etc. (CG 2,3)
- Use field and studio recording equipment and mixers. (CG 2,3)
- Use signal processing to enhance mixing and recording. (CG2,3)
- Re-mix and re-record previously captured audio. (CG 2,3)

Unit VIII: Using the Software and Hardware to Create the Sound Track or Recording

- Write an essay on the overview of digital editing. (CG 1,2,3,4, G1)
- Identify the various digital audio formats and explain the pro and cons of each format. (CG 2,3)

- Choose the correct quality digital audio file format for the target media. (CG 2,3)
- Use digital editing software to create cues, soundtracks and recordings. (CG 2, 3)
- Record to hard drives, Digital Audio Workstations, DVD, CD, mini disc, IPod and other digital recording devices. (CG 2,3)
- Manage the hard drive. (CG 2.3)
- Used various industry standard digital editing suites such as ProTools, Adobe Audition and SFX. (CG 2,3)

UNIT IX: Music Underscoring

The student will be able to:

- Describe music characteristics in detail including melody, harmony, tempo, and dynamic range. (CG 1, 2, 3, G1)
- Explain the uses of music in a production and list and explain the functions of music underscoring. (CG 1, 2, 3)
- Create music underscoring for a theatre, television, and radio or web media production using music libraries or original compositions. (CG 1, 2, 3)
- Choose the appropriate file formats to maintain sound quality. (CG 2)
- Rip audio from CD or analogue sources. (CG 3)
- Obtain copyright clearance for music not in the public domain. (CG 2)

Evaluation of Student Learning.

Students' achievement of the course objectives will be evaluated through the use of the following

- Active participation in class
- A series of Unit tests assessing students' comprehension of basic terminology and practices. (CG1&2)
- A series of essays and short papers assessing students' comprehension of basic concepts and practices. (GA&B, CG1&2)
- The midterm project will require that students mix and edit a live performance and record it to CD. (Course Goals 1, 2, 3 and 4)
- The final project will be the creation of a compelling soundtrack for a theatre, television, radio or WEB production. (Course Goals 1, 2, 3 and 4)

Evaluation Tools	Percentage Of Grade
Unit Tests	30%
Unit essays and papers	10%
Mid-term Recording Project	25%
Final design project	30%
Class Participation	5%
Total	100%