I. INTRODUCTION

A. This course is a study of basic radio production equipment and the radio broadcast industry. Emphasis will be given to the proper use of audio console, microphones, digital audio workstations and remote broadcast equipment.

B. This course is required for a Certificate of Completion in Radio TV Broadcasting, General Studies degree with emphasis in Radio TV Broadcasting and may be used as a University Parallel selection for the Associate of Arts Degree in Radio TV Broadcasting.

C. Prerequisites: None

II. LEARNING OUTCOMES

Upon successful completion of this course, Audio/Radio Production, the student will be able to:

A. Operate a broadcast audio console. (C18, C19, F7, F9)

B. Explain the operational theory of an audio console. (C5, C7)

C. Operate each digital audio storage device and explain the operating theory of each. (C7, C18)

D. Explain the operating theory of each of the three types of broadcast quality microphones. (F1, C5, C7, C18, C19)

E. Digitally edit audio tape. (C18, C19, F8, F9)

F. Set up a radio RPT unit. (C18, C19, F8)

G. Produce a 30 and 60 second radio commercial announcement (F2, C18, C19, C5, C7)
H. Conduct an on-air shift. (F1, C18, C19, F6, F7, F8)

III. INSTRUCTIONAL MATERIAL

A. The instructional materials identified for this course are viewable through www.ctcd.edu/books

IV. COURSE REQUIREMENTS

A. Assignments are to be completed before the class period during which the material will be discussed.

B. A professional attitude toward class performance is mandatory. Excessive tardiness or absences will not be tolerated. Assignments are due on the date specified. Late assignments will be subject to a deduction of points. Assignments which are not acceptable must be resubmitted and will be subject to a deduction of points.

C. No class or laboratory assignments may involve the production of illegal, obscene, or indecorous materials or the execution of what is commonly considered to be illegal, obscene, or indecorous behavior.

D. Laboratory assignments for the class will be given by the instructor

V. EXAMINATIONS

There will be three exams: a 3 weeks, mid-term and a final. Examination dates will be announced by the instructor. If a student is absent during an exam, a make-up exam will be administered to the student, provided the student provides an excused absence given by the instructor. Unexcused absences during exams will not be entitled to a make-up consideration and will be awarded "0" points for the exam missed.

VI. SEMESTER GRADE COMPUTATION

<table>
<thead>
<tr>
<th>Distribution of Points</th>
<th>Points to Grade Ratio</th>
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<tbody>
<tr>
<td>Three Weeks</td>
<td>100 pts</td>
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<tr>
<td>Mid-term Exam</td>
<td>150 pts</td>
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<td>Final Exam</td>
<td>250 pts</td>
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<td>Lab</td>
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COMM 2303
VII. NOTES AND ADDITIONAL INSTRUCTION FROM THE INSTRUCTOR

A. **Course Withdrawal**: It is the student’s responsibility to officially withdraw from a course if circumstances prevent attendance. Any student who desires to, or must, officially withdraw from a course after the first scheduled class meeting must file a Central Texas College Application for Withdrawal (CTC Form 59). The withdrawal form must be signed by the student.

CTC Form 59 will be accepted at any time prior to Friday of the 12th week of classes during the 16-week fall and spring semesters. The deadline for sessions of other lengths is:

- **10-week session**: Friday of the 8th week
- **8-week session**: Friday of the 6th week
- **5-week session**: Friday of the 4th week

The equivalent date (75% of the semester) will be used for sessions of other lengths. The specific last day to withdraw is published each semester in the Schedule Bulletin.

A student who officially withdraws will be awarded the grade of “W” provided the student’s attendance and academic performance are satisfactory at the time of official withdrawal. Students must file a withdrawal application with the College before they may be considered for withdrawal.

A student may not withdraw from a class for which the instructor has previously issued the student a grade of “F” or “FN” for nonattendance.

B. **Administrative Withdrawal**: An administrative withdrawal may be initiated when the student fails to meet College attendance requirements. The instructor will assign the appropriate grade on CTC Form 59 for submission to the registrar.

C. **Incomplete Grade**: The College catalog states, “An incomplete grade may be given in those cases where the student has completed the majority of the coursework but, because of personal illness, death in the immediate family, or military orders, the student is unable to complete the requirements for a course….” Prior approval from the instructor is required before the grade of “I” for Incomplete is recorded. A student...
who merely fails to show for the final examination will receive a zero for the final and an “F” for the course.

D. **Cellular Phones and Beepers:** Cellular phones and beepers will be turned off while the student is in the classroom or laboratory.

E. **American’s With Disabilities Act (ADA):** Disability Support Services provide services to students who have appropriate documentation of a disability. Students requiring accommodations for class are responsible for contacting the Office of Disability Support Services (DSS) located on the central campus. This service is available to all students, regardless of location. Explore the website at [www.ctcd.edu/disability-support](http://www.ctcd.edu/disability-support) for further information. Reasonable accommodations will be given in accordance with the federal and state laws through the DSS office.

F. **Instructor Discretion:** The instructor reserves the right of final decision in course requirements.

G. **Civility:** Individuals are expected to be cognizant of what a constructive educational experience is and respectful of those participating in a learning environment. Failure to do so can result in disciplinary action up to and including expulsion.

**VIII. COURSE OUTLINE**

A. **Unit One:** Introduction to Radio Broadcasting

1. **Unit Objectives:** Upon successful completion of this unit, the student will be able to:
   a. Identify the requirements for successful completion of course
   b. List the types of radio stations according to FCC classifications
   c. Diagram the typical radio station organizational structure
   d. List the sources of revenue of today’s radio stations
   e. List and define types of production equipment found in radio stations

2. **Learning Activities:**
   a. Classroom lecture and discussion (F5, F11)
   b. Reading assignment Text Chapter 1 & pages 349-357

3. **Unit Outline:**
   a. Course introduction
   b. History of radio
   c. The radio station
(1) Definition of a station
(2) Basic technical information
d. How the station is organized
   (1) Management
   (2) Programming/production
   (3) Sales
   (4) Engineering
   (5) Traffic
   (6) News
e. Production department personnel
   (1) Duties
   (2) Equipment
f. How the station makes money
   (1) Sources of revenue
g. Programming

B. Unit Two: Sound

1. Unit Objectives: Upon successful completion of this unit, the student will be able to:
   a. Define sound
   b. List and define the four characteristics of sound
   c. List and define the three stages of the sound life cycle
   d. List the frequency response of human hearing
   e. List and describe the divisions within the frequency spectrum of human hearing
   f. List the dynamic range of human hearing
   g. Discuss the relationship of frequency and loudness
   h. Define noise and distortion
   i. List three types of noise
   j. List and describe six types of sound distortion
   k. Define signal-to-noise ratio
   l. Diagram the audio path from microphone to radio receiver
   m. Describe the functions of the microphone, console, transmitter and receiver

2. Learning Activities:
   a. Classroom lecture and discussion (F5, F11)
   b. Student homework study (C5, C6)
   c. Reading assignment: Text chapter 2 pages 27-40 (F1, C5, C6)

3. Unit Outline:
   a. Sound
      (1) Definition
      (2) Characteristics
      (3) The sound life cycle
b. Human hearing and sound
   (1) Frequency response
   (2) Dynamic range
   (3) Frequency and loudness

c. Audio path

C. Unit Three: Analog/Digital Audio

1. Unit Objectives: Upon successful completion of this unit, the student will be able to:
   a. Describe the development of digital audio technology
   b. Describe the process of analog to digital conversion
   c. Describe the three methods of storing digital audio
   d. Describe the steps of sampling and quantization

2. Learning Activities:
   a. Classroom lecture and discussion (F5, F11)
   b. Student homework study (C5, C6, C19, F7)
   c. Reading Assignment: Chapter 2 pages 40-45 (F1, C5, C6)

3. Unit Outline:
   a. Development of Digital Audio
   b. Storage
   c. ADC/DAC
      (1) Sampling
      (2) Quantization

I. Unit Four: Microphones

1. Unit Objectives: Upon successful completion of this unit, the student will be able to:
   a. List methods by which microphones may be classified
   b. List the five types of microphones as classified by internal structure
   c. List the three types of professional microphones
   d. List four advantages of the dynamic microphones
   e. Describe the difference between high and low independence microphones.
   f. List and describe the three types of directional characteristics of microphones.
   g. Define frequency response as it pertains to microphones
   h. Define proximity effect, bass roll off, and overload
   i. Describe the use of the pop filter and windscreen
   j. Describe the type of cable and connectors used with microphones
   k. Explain the difference between acoustical and electrical phase
cancellation

l. Define three-to-one rule
m. List six methods for fixed mic mounting
n. List the advantages and disadvantages of the Omni-and Uni-directional microphones
o. List seven suggested guidelines for mic to source working distance applicable to radio

2. Learning Activities:
   a. Classroom lecture and discussion (F5, F11)
   b. Student homework study (F11, C18, C19)
   c. Reading assignment: Chapter 3 (F1, C5, C6)

3. Unit Outline:
   a. Microphone classifications
   b. Internal structural classification
      (1) Ribbon
      (2) Condenser
      (3) Dynamic
   c. Impedance classification
      (1) High
      (2) Low
   d. Pick-up pattern
      (1) Omni
      (2) Uni
   e. Characteristics
      (1) Frequency response
      (2) Overload
      (3) Proximity effect
   f. Phase
      (1) Acoustical
      (2) Electronic
   g. Microphone use in radio
      (1) Mounting
      (2) Working distance
      (3) Wind screens and pop filters
   h. Special use mics
      (1) Head set
      (2) Wireless
      (3) Shotgun
      (4) Lavaliere

D. Unit Five: Audio Consoles

1. Unit Objectives: Upon successful completion of this unit, the student will be able to:
a. List the three functions fulfilled by the audio console
b. Describe the function of the pre-amp, pot, key, vu meter, and master pot
c. List six examples of common console inputs
d. Diagram a four-input console
e. Describe the function of a muting relay
f. Describe the function of the audition channel and cue channel
g. Discuss the function of the delegation switch
h. List three examples of console outputs
i. List five types of consoles

2. Learning Activities:
   a. Classroom lecture and discussion (F5, F11)
   b. Student homework study (F7, C5, C6, C7)
   c. Reading assignment: Chapter 4 (F1, C5)

3. Unit Outline:
   a. The console
      (1) Function
      (2) Components
      (3) Types
   b. Console inputs
   c. Console outputs

E. Unit Six: Digital Audio Recording

1. Unit Objectives: Upon successful completion of this unit, the student will be able to:
   a. Describe the following digital recording equipment: DASH, DCC, DAT
   b. Digital Cartridge recorders
   c. Mini Disc
   d. Compare analog vs. digital recording
   e. Describe the use of digital audio workstations

2. Learning Activities
   a. Classroom lecture and discussion (F5, F11)
   b. Student homework study (C5, C6)
   c. Reading assignment Chapter 5 (F1, C5, C6)

3. Unit Outline
   a. Digital recording devices
      (1) DASH
b. Digital audio workstations

c. Digital vs. analog

recording **Unit Seven** Signal Processing

1. **Unit Objectives:** Upon successful completion of this unit, the student will be able to:
   
a. List and describe two types of equalizers
   
b. Describe the use of equalizers in radio production and broadcasting
   
c. List and describe two types of noise reduction systems and explain the use of noise reduction.
   
d. Describe the use of the following processors –
      (1) Reverb units
      (2) Compressor limiters
      (3) Harmonizers
      (4) Flangers
      (5) De-essers

2. **Learning Activities:**
   
a. Classroom lecture and discussion (F5, F11)
   
b. Student home work study (C5, C6, F11, C19)
   
c. Reading assignment Chapter 6 (F1, C5, C6)

3. **Unit Outline:**
   
a. Equalization
      (1) Types of equalizers
   
b. Noise reduction
      (1) Types of noise reduction systems
   
c. Other types of processing equipment
   
d. Production uses
   
e. On-air uses

L. **Unit Eight** Remote Broadcasts

1. **Unit Objectives:** Upon successful completion of this unit, the student will be able to:

   a. List five examples of remote broadcasts
   
   b. List three methods to transmit from the remote site to station
   
   c. List the advantages and disadvantages of the RPT, loop, and line
   
   d. Describe the uses of a fixed versus temporary loop
   
   e. Discuss process of pre-remote check out and remote site survey

**COMM 2303**
2. **Learning Activities:**
   a. Classroom lecture and discussion (F5, F11)
   b. Student homework study (C5, C6, C7)
   c. Read Chapter 11

3. **Unit Outline:**
   a. Types of remote broadcasts
   b. Transmission methods
      (1) Loop
      (2) Line
      (3) RPT
   c. Remote checklist
      (1) Equipment check-out and site survey
COMM 2303 Audio Production

STUDENT STATEMENT

I, ____________________________________, hereby certify the instructor (please print) has fully explained the requirements and objectives of this course.

I understand my responsibilities regarding class attendance and assignments.

_______________________________________________
Student Signature