

**Course Syllabus**

**MUSC 2459 (4:3:4)**

**Sound System Optimization**

**Live Sound/Sound Reinforcement Certificate**

**Sound Technology Program**

**Technical Education Division**

**Levelland Campus**

**South Plains College**

**Fall 2018/Spring 2019**

**Creative Arts Department - South Plains College - Levelland Campus**

**Course Syllabus**

**Course Title:** *MUSC 2459 Sound System Optimization (4:3:4)*

**Instructor:** *Matt Quick*

**Office:** *CB 138 - Telephone: (806) 716 2472 – voice-mail configured.  
E-mail: [mquick@southplainscollege.edu](mailto:mquick@southplainscollege.edu)*

**Office Hours:** *As posted on instructor's door*

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**I. General Course Information:**

- A. Description: System optimization. Includes related acoustic principles and system alignment procedures. Emphasizes system equalization, time/phase alignment, subsystem integration, loudspeaker management systems, ear training, and industry-standard acoustic analysis software.
- B. End of Course Outcomes: Analyze audio systems using industry-standard tools; explain the variables affecting the alignment and behavior of sound systems; demonstrate optimization of audio systems performance using data acquired from system analysis; and describe techniques to verify individual sound system components and systems performance.
- C. Course Competencies: Upon completion of this course, each student will have demonstrated through comprehensive examinations, with a score of 60% or better, a competent understanding of sound system verification, alignment, and optimization.
- D. Academic Integrity: It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension. Students should refer to the SPC General Catalog, pg.22-23, regarding consequences for cheating and plagiarism (see "Academic Integrity" as well as "Student Conduct" sections).
- E. SCANS: This course is designed to meet the following SCANS and Foundation skills criteria: C3, C5, C6, C7, C8, C10, C13, C16, C17, C18, C19, F2, F5, F6, F9, F11, F15, and F16. A complete list of SCANS Competencies and Foundation Skills are located on the last page of the syllabus.
- F. Verification: This course is a building block for the student to move towards a capstone experience.

## II. **Specific Course/Instructor Requirements:**

- A. Textbook and Other Materials: Sound Systems: Design and Optimization 3rd Edition by Bob McCarthy, handouts, and other resources will be provided by instructor as needed. One 4GB Flash Drive.
- B. Attendance Policy: Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus.

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy.

It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

Punctual and regular attendance is required of all students. Missing four consecutive classes or having a total of five absences *may* result in an instructor-initiated withdrawal. Students are responsible for all missed material. If a student is absent on a day that a test is given, **he or she will not be allowed to make up the test unless arrangements are made prior to the test day.** Any student not present at roll taking will be counted absent unless prior arrangements have been made.
- C. Assignment Policy: Projects and reading assignments will be announced at least one class meeting prior to responsibility for material.
- D. Grading Policy/Procedure: The student's final grade will be made up of a weighted average of at least one written test (20%), daily quiz average (10%), lab assignments (20%) and course competencies (50%). A list of the required course competencies will be attached to this syllabus. Each competency is worth 10 points; however a student must achieve at least 7 out of the 10 points in every competency to complete the competency requirement. Non completion of the competencies equals a 0% for the competency portion of the student's grade. Grading format: A= 90-100%, B= 80-89%, C= 70-79%, D= 60-69%, F= 0-59%
- E. Special Requirements: MUSC 1400 is a prerequisite/co requisite. Students will be responsible for arranged lab activities throughout the semester.

## III. **Course Outline:**

### *Topic Outline:*

Sound system optimization introduction  
Goals, obstacles, and transmission in sound system optimization  
Summation  
Reception and ear training for system optimization  
Test  
System examination/verification and tools

FFT fundamentals  
 In depth look at Phase  
 Sound system alignment procedures  
 Test  
 Sound system optimization practice  
 Hands on test  
 Final

*Instructor reserves the right to modify this at anytime.*

#### IV. **Accommodations**

##### ADA Statement

Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland Student Health & Wellness Center 806-716-2577, Reese Center (also covers ATC) Building 8: 806-716-4675, Plainview Center Main Office: 806-716-4302 or 806-296-9611, or the Health and Wellness main number at 806-716-2529.

#### **Competency Descriptions for MUSC 2459**

1	Communicate the goals of sound system optimization
2	Communicate the obstacles of sound system optimization
3	Communicate the basic techniques of sound system optimization
4	Thorough understanding of summation including comb filtering and its causes
5	Understanding of spectral and spatial acoustic crossover concepts
6	Understanding of the system examination/verification process
7	Successful interfacing of measurement system and sound system
8	Ability to perform/interpret impulse response measurements
9	Ability to perform/interpret transfer function measurements
10	Ability to read and interpret phase plot
11	Understanding of measurement microphone placement strategies
12	Ability to use all of the above measurements/concepts to optimize the frequency response and phase response of a multi-way loudspeaker system
13	Ability to use all of the above measurements/concepts to phase align a fill-system with a main system
14	Communicate the roles and responsibilities of a professional systems engineer