

# TSM 443

**CREDIT HOURS: 3**

**I. TITLE: Telephone Technology**

**II. CATALOG DESCRIPTION:**

A study of telephone systems including central offices, private branch exchanges, multimedia teleconferencing centers, local loops and distribution, etc. Engineering matters are the emphasis, but regulatory and market issues are also considered as appropriate. Lecture, laboratory and tours of area facilities are included. Prerequisite: TSM-241.

**III. PURPOSE:**

To provide advanced instruction in the field of telephone system technology. This course is required for students pursuing the area in Telecommunications Systems Management.

**IV. COURSE OBJECTIVES:**

To provide the student with focused instruction and experience in telephone system technology. A comprehensive study of the field will be made and opportunities provided for individual hands-on experiences with equipment and procedures.

**V. CONTENT OUTLINE:**

Topics to be selected from the following: characteristics of the human voice, telephony as a business tool, traditional PSTN circuit switched technology, packet switched technology, VoIP as a replacement technology for circuit switched voice, IP network infrastructure requirements for supporting VoIP, Quality of Service, Class of Service, troubleshooting circuit switched voice and VoIP.

**VI. INSTRUCTIONAL ACTIVITIES:**

Lecture, demonstrations, laboratory, individual assignments

**VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:**

Students will interface, program and test telephone and Wide Area Network components and systems to gain practical knowledge of actual equipment and procedures. Students are expected to attend lab sessions and to demonstrate their skills and understanding on practical lab exams.

**VIII. RESOURCES:** Components, equipment, and computer support are provided in the laboratories; reference manuals and specialized books are available in the laboratories, in the library, or from the instructor.

**IX. GRADING PROCEDURES:**

A. Grading Factors:

Graded Class Activities	15%
Homework Assignments	15%
Theory Exams	30%
Laboratory Practical Exams	40%

B. Grading Scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	E

C. Graded Class Activities are designed to provide feedback to the student and the instructor about student understanding of assigned reading and previous class discussion topics.

- D. Homework Assignments are designed to provide practice for the student in the application of technical theory.
- E. Theory Exams are written exams that test the student's understanding of material from reading, lecture & discussion. The number and form of exams will be decided by the instructor based on class performance on in-class activities and homework assignments and may vary from semester to semester.
- F. Laboratory Practical Exams test the student's ability to apply theory to practice using laboratory equipment. Practical exam problems are taken from laboratory experiences.
- G. Written Communications Skills: Part of the grade on in-class activities, homework assignments, and essay portions of exams will be based on written communication skills. Proper grammar, punctuation and clarity of expression will be evaluated. Computer word-processing should be used on all written assignments except as indicated the instructor. Unless otherwise specified hand-written submissions will not be accepted.

**X. ATTENDANCE POLICY:**

Regular attendance is expected. No make-ups are given for quizzes or in-class activities except in the case of excused absences as defined in the University Attendance Policy as published in the current Undergraduate Bulletin. The instructor may allow absence for department sanctioned events as well. Any make-up work will be at the discretion of the instructor. Documentation of the cause of absence will be required before makeup work is considered. Missing more than two labs (unexcused) will result in a failing grade (0%) for the lab portion of the course grade regardless of performance on the lab exams. Online attendance will be considered checking the announcements page of the Blackboard site for the course each day M-F excluding school holidays.

**XI. ACADEMIC HONESTY POLICY:**

Cheating, plagiarism, submitting another person's material as one's own, or doing work for which another person will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, and the unauthorized copying of exams, assignments, reports, or drawings. Disciplinary action may result in no credit for an assignment or exam and/or failure of the course. Incidents of Academic Dishonesty will be reported to the Chair of Industrial & Engineering Technology.

**XII. TEXT AND REFERENCES:**

Text: *Switching to VoIP*, Ted Wallingford, 2005 O'Reilly Media, ISBN: 978-0-596-00868-0  
Other reference material will be provided as needed.

**XIII. PREREQUISITES: TSM 241**

**XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:**

Murray State University does not discriminate on grounds of race, color, gender, sexual orientation, religion, national origin, age, disability, or veteran's status in providing any educational or other benefits services of Murray State University to students or those applying for admission at Murray State University. Murray State University attempts to provide equal opportunity in all areas of student admissions, financial aid, employment, and placement and provides upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities.