



College of Business

Department of Computer Science and Information Systems

MURRAY STATE UNIVERSITY

COURSE SYLLABUS

TSM601 (Fall 2010)

Telecommunications Principles

DEPARTMENT: Computer Science and Information Systems

COURSE NUMBER: TSM 601

CREDIT HOURS: 3

- I. **TITLE:** Telecommunications Principles.
- II. **CATALOG DESCRIPTION:** A graduate level introduction to the underlying principles of telecommunications. This course presents the problems and solutions involved in communicating over extended distances. Topics include: fundamental physical and electronic concepts; information theory; types of media; requirements and capacity calculations; modulation and multiplexing methods; standards and architectures; modern applications and issues. Throughout the presentation of technical fundamentals, discussion will focus on relevant management issues such as cost, infrastructure, support, and business advantage.
- III. **PURPOSE:** To build a good foundation for students in the application and management of modern communications and network technologies.
- IV. **COURSE OBJECTIVES:** To provide the Telecommunications student with the concepts necessary to readily understand the underlying principles of communication systems in use today. An introductory look at the underlying principles of telecommunications, this course presents a layman's approach to understanding the problems and solutions in communicating over distances.
- V. **CONTENT OUTLINE**
 - A. General Foundations
 - a. Internet Research – Using Search Engines
 - b. What is Telecommunications?
 - c. Communications and Information Theory
 - d. Alternate Numbering Systems
 - B. Network Fundamentals
 - a. Network Models
 - b. Electronic Signals
 - c. Analog versus digital
 - d. Media – Physical Propagation
 - e. Bandwidth and Overhead
 - f. Switching and Multiplexing
 - g. Error Control/Detection/Correction

- C. Data Link Layer
- D. Local Area Networks (LANs)
- E. Wide Area Networks (WANs)
- F. Convergence
- G. Student Presentations and Case Studies on Telecommunication Principles

VI. INSTRUCTIONAL ACTIVITIES: Lecture, discussion, and group projects. There will be weekly reading assignments, individual projects, and group projects.

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES: : Each student will select, research, and report on a telecommunications principle and its application. Topics must be approved by the instructor. Students will prepare and submit a paper on their approved topic and will prepare and make on-line presentations to the class. Students will be responsible for the bulk of the material presented in the last fourth of the course. Student presentations will be testable material on the final exam. During the semester, each student will participate in a series of virtual ‘lab exercises’ that over time will result in the development of a simple communications protocol.

VIII. RESOURCES: MSU Blackboard – <http://estudy.murraystate.edu/webapps/login/>
 Students in the online section must have: **high-speed internet access; web-cam and headset.** All students must have Microsoft Office software (or ability to read and create Office compatible documents).

IX. GRADING PROCEDURES:

Grading Scale:

92-100%	A
80-91%	B
70-79%	C
60-69%	D
Below 60%	E

Students will be graded on participation, presentations, papers, and examinations.

1. Tests (probably 3) – 60%.
2. Paper on selected telecommunications principle – 20%
3. Student Presentations – 5%.
4. Other Assignments, Participation, Quiz’s – 15%.
5. Grievance and Appeals Policy: <http://www.murraystate.edu/cbpa/PDF/Appeals.pdf> .

Reminder – you must earn at least a ‘B’ in a graduate course to count it towards a degree!

X. ATTENDANCE POLICY: This course will adhere to the policy published in the current MSU Bulletin. There will be a weekly classroom lecture with a concurrent live-online Blackboard/Elluminate session each Wednesday evening from 7:00 to 10:00 PM. Students enrolled in the on-campus section are required to attend class in-person on-campus in BB453. Students in the online section are expected to participate in the live-online sessions to the extent possible, but they may watch recordings of the sessions when necessary.

XI. ACADEMIC HONESTY POLICY: Automated tools will be used to check papers and assignments for plagiarism. The Murray State University College of Business (MSU

CoB) Academic Honesty Policy is viewable online at: <http://www.murraystate.edu/cbpa/PDF/Honesty.pdf>. Cheating, plagiarism, submitting another person's material as one's own, or doing work for another person for academic credit are all impermissible. This includes the use of unauthorized books, notebooks, people, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, or term papers, laboratory reports, drawings or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may result in no credit for an assignment or exam and/or failure of the course. All instances of academic dishonesty will receive appropriate punitive action from the instructor of this course and the names of the students involved will be reported to the Dean in all instances. The MSU CoB Ethics policy is viewable online at: <http://www.murraystate.edu/cbpa/PDF/Ethics.pdf>

- XII. TEXT AND REFERENCES:** Data Communications and Networking, Behrouz A. Forouzan, 4th Ed., McGraw Hill, ISBN: 978-007-296775-3.
- XIII. PREREQUISITES:** Bachelor's degree.
- XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPORTUNITY:** State University does not discriminate on grounds of race, color, gender, sexual orientation, religion, national origin, age, handicap, 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. For information regarding nondiscrimination policies contact the Office of Equal Opportunity, 270-809-3155.
- XV. Fall 2010 Office hours:** Mon. and Wed. 1:00 –3:30 PM, Tues. and Thurs. 8:30 – 11:0 AM.