

**MURRAY STATE UNIVERSITY**  
**DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY**

**Course Number: TSM 121**

**Credit Hours: 3**

- I. TITLE: Principles of Telecommunications Electronics
- II. CATALOG DESCRIPTION:  
An overview of the electronic processes and theory utilized in the field of telecommunications.  
Prerequisite: MAT 140.
- III. PURPOSE:  
To build a good foundation for the student to understand the functions of the telecommunications electronic components in use today and to relate basic electronic theory to telecommunications technology.
- IV. COURSE OBJECTIVES:  
To provide the student with the concepts necessary to readily understand the underlying principles behind the functions of telecommunications equipment.
- V. CONTENT OUTLINE:  
A. Basic Electrical Principles  
B. The Electromagnetic Spectrum  
C. Fourier and Spectrum Analysis  
D. Decibels and Noise  
E. Amplitude Modulation  
F. Frequency & Phase Modulation  
G. Wire and Cable Media  
H. Digital Information  
I. Digital Communication Fundamentals  
J. Digital Communication Systems  
K. Digital Modulation and Testing  
L. Serial Interfaces  
M. Multiplexing  
N. Optical Networking
- VI. INSTRUCTIONAL ACTIVITIES:  
Lecture, discussion, demonstration
- VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES: None
- VIII. RESOURCES: Web Resources
- IX. GRADING PROCEDURES:

Unit Exams (Including Final)	85 %
Quizzes & Homework	15 %
Total	100 %

Grading Scale:

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

X. ATTENDANCE POLICY:

This course will adhere to the policy published in the current MSU Undergraduate Bulletin.

XI. ACADEMIC HONESTY POLICY:

This course will adhere to the policy published in the current MSU Undergraduate Bulletin.  
Disciplinary action may result in no credit for an assignment or exam and/or failure of the course.

XII. TEXT AND REFERENCES: No text

XIII. PREREQUISITE: MAT 140

XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Sabrina Y. Dial, Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice); 270-809-3361 (TDD).