MURRAY STATE UNIVERSITY

DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY

COURSE NUMBER: TSM 210 CREDIT HOURS: 4

I. TITLE: Electrical Systems II

II. CATALOG DESCRIPTION:
A continuation of TSM 110 through the study of semiconductor devices and their applications, and particularly how electronic technology is applied to the field of data transfer and communications. Three hours lecture and two hours lab. Prerequisite: TSM 110. (Fall)

III. PURPOSE:
To prepare the student for understanding the underlying principles that support communication electronics and the building blocks of both analog and digital communication systems.

IV. COURSE OBJECTIVES:
It is the goal of this course to provide the student with a working knowledge of communications-based electronic application circuitry: rectifiers, amplifiers, frequency response, feedback, differential/operational amplifiers, and integrated circuit technology.

V. CONTENT OUTLINE:
- A. Semiconductor Principles
- B. Diodes and Applications
- C. Bipolar Junction Transistors
- D. Field Effect Transistors
- E. Amplifiers (Small Signal and Power)
- F. Oscillators
- G. Operational Amplifiers
- H. Op-Amp Applications

VI. INSTRUCTIONAL ACTIVITIES:
- A. Three hours Lecture each week.
- B. Class Discussion
- C. Two hours Lab each week
- D. Simulation Software

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:
- A. Two hours scheduled laboratory each week.
- B. Additional 'open-lab' hours.
- C. Emulator Labs to be done at home.

VIII. RESOURCES:
- A. Lab Handouts
- B. Data Sheet Handouts
- C. Special Assignment Handouts
- D. Supplemental Material on Internet

IX. GRADING PROCEDURES:

Grades will be based on percentage of total points accumulated. The lab grades will comprise 10% of the grade, quizzes 10%. At least four tests will be given, weighted equally for 80% of the grade.

A. The grading scale is 90-100%=A, 80-89%=B, etc.

B. In addition to content, labs will be graded on communication skills including grammar, spelling, proper usage of terminology, and effectiveness. It is important that all written assignments present a professional image. All written assignments shall be done on a word processor, and an Electronic CAD package must be used for schematics. Credit for presentation and communication shall be 15% of the total assignment score.

C. All students are likewise expected to demonstrate oral communication skills, through classroom and lab conversations and presentations.

D. ***Note: An incomplete will be given for the semester grade unless all lab reports are turned in. Lab write ups are due at lab time the following week. Points will be deducted for late labs, one point for each day late, for up to 4 points lost.***

X. ATTENDANCE POLICY:

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

A. Prior excuse (at least 24 hours) must be supplied if student plans to miss an exam, quiz or lab. Otherwise, it cannot be made up.

B. No credit will be given for any lab not attended even if a report was turned in. If prior excuse is given, arrangements must be made for a makeup lab. All lab reports along with any computer programs that the lab requires are due at the beginning of the following lab. After the due date, 10% will be deducted for each workday late.

XI. ACADEMIC HONESTY POLICY:

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

A. No credit given for any lab report which is a 'clone' of another. Write your reports individually.

B. No exams will be given any credit if it is discovered that the student cheated in any way.

C. Cheating, plagiarism (submitting another person's material as one's own), or doing work for another person which 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; the unauthorized copying of examinations, assignments, reports or term papers; or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

XII. TEXT AND REFERENCES:

Electronics Fundamentals, 8e by Thomas Floyd and David Buchla, Pearson P/H
Circuit Maker Simulation Software by Microcode Engineering Inc.

XIII. PREREQUISITES:

TSM 110 - Electrical Systems I (or comparable lab-based course), or consent of instructor.

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.