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EET 270T.01: Electronic Communications

Steven L. Stiff

University of Montana - Missoula, steven.stiff@umontana.edu

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**EET270T ELECTRONIC COMMUNICATIONS
SYLLABUS
COURSE DESCRIPTION, POLICIES, AND MATERIALS**

CREDITS: 4**PREREQUISITES:** EET103T

INSTRUCTOR: Steven (Steve) L. Stiff
Phone: 243-7672
E-mail: steven.stiff@umontana.edu

Office: to be determined
Office Hours: to be determined

CLASS SCHEDULE:

Monday through Friday, 10:10am – 12:00pm (noon)
Class time will be approximately 50% lecture and 50% lab activity.

COURSE DESCRIPTION:

Explores audio and radio frequency (RF) circuits. Topics include AM and FM signal modulation and demodulation, RF transmitters, RF receivers, RF amplifiers, audio amplifiers, oscillators, mixers, and antennas. Includes hands-on labs.

TEXT(S):

- Principles of Electronic Communication Systems 2nd Edition, Louis E. Frenzel, McGraw-Hill (2003), ISBN 0078281318
- Experiments Manual for Communication Electronics Principles and Applications 3rd Edition, Louis E. Frenzel (2001), Glencoe/McGraw-Hill, ISBN 0028048385
- Handouts, worksheets, and labs as provided by the instructor.

COURSE OBJECTIVES:

At the completion of this course, the student will be able to understand and describe the operation of:

- 1) Amplitude modulation and detection circuits
- 2) Single-sideband (SSB) communications
- 3) Frequency modulation and detection circuits
- 4) Phase modulation and detection circuits
- 5) Communications transmitters and their amplifier circuits
- 6) Communications receivers
- 7) Multiplexing/demultiplexing
- 8) Antennas, transmission lines, and radio wave propagation

GRADING:

- Points are awarded for each graded item. Your final grade is calculated by summing all points for a given category and weighted by its associated percentage as shown below.
- Letter grades are assigned as a percentage of weighted total points.

Homework, Quizzes, Attendance	25.0%
Labs (construction & write-ups)	25.0%
Semester Project	10.0%
Exams (including Final)	35.0%
Total	100.0%

A	93.0% and up
B	85.0% - 92.0%
C	70.0% - 84.0%
D	60.0% - 69.0%
F	Below 60.0%

SEMESTER PROJECT:

- The construction and calibration of the AM/FM radio kit, such that it receives at least 3 stations on the AM band and 3 stations on the FM band at each station's appropriate location on the tuning dial.
- The kit is to be assembled and tested per the construction schedule and the instruction manual.
- Each stage of construction is graded.

LAB & HOMEWORK MATERIALS: (supplied by student):

- EET270T parts kit (UMCOT bookstore)
- Elenco Model AM/FM-108K Radio Kit (UMCOT bookstore)
- Graph paper (Engineer's Computation Pad, Ampad #22-144)
- Prototyping Breadboard
- Additional materials as required by the instructor.

EQUIPMENT: (supplied by UMCOT):

Includes, but not limited to:

- Personal computer
- Oscilloscope
- RF generator
- Signal generator
- Variable voltage/current power supply
- Additional materials as provided by the instructor