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EET 270T.01: Electronic Communications

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EET270T ELECTRONIC COMMUNICATIONS
SYLLABUS

CREDITS: 4  PREREQUISITES: EET103T

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

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):
• 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.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework, Quizzes, Attendance</td>
<td>25.0%</td>
<td>A</td>
</tr>
<tr>
<td>Labs (construction &amp; write-ups)</td>
<td>25.0%</td>
<td>B</td>
</tr>
<tr>
<td>Semester Project</td>
<td>10.0%</td>
<td>C</td>
</tr>
<tr>
<td>Exams (incluing Final)</td>
<td>35.0%</td>
<td>D</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>F</strong></td>
</tr>
</tbody>
</table>

**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