

ET 444 Telecommunications Syllabus

The field of telecommunications is very broad and daily becomes more complex. Therefore the object of this course is to give a general introduction to the topic of telecommunications and then let the student focus on one optional project for further study. This optional project will consist of a working model and a paper.

The heart of this course is an AM/FM radio receiver (Elenco Model AM/FM-108K or Graymark 542 AM/FM.) These kits are challenging and require many weeks to complete. The student must solder many components and then use test equipment including the oscilloscope, RF generator, signal generator, power supply, voltmeter and ammeter. The kit includes a manual with assembly and test instructions as well as AM/FM theory.

Once the required project is completed, the student is free to work on an optional project and paper. After the project is completed and working correctly, it will be demonstrated to the whole class in an informal presentation.

For the majority of time, the student will work independently on the required and optional projects. But with the demonstration of the optional project, the student will help the rest of the class to observe the many different facets of electronic communication.

The following page contains more details on this course and also information on grading policy. As with all courses, there are homework assignments which are to be handwritten; tests and readings from a textbook. Because of the hands-on nature of this class, it is best if the students supplies certain small tools and a soldering iron; but more information will be given on the first day of class.

ET 444 Telecommunications

Text Book: Electronic Communication Systems
William Schweber
ISBN: 0-13-091621-8

Digital Signal Processing Teaching Kit

Grades will be based on attendance, homework, tests and projects as follows:

Letter Grades are as follows:

Attendance:	25%	90-100%	A
Homework:	25%	80-89%	B
Tests (2)	25%	70-79%	C
Projects (1)	25%	60-69%	D
Total:	100%	00-59%	F

Topics

Ch. 1 Electronic Spectrum Sec. 1-2 Prob. 1, 3, 5, 7 Sec. 1-4 Prob. 1, 3, 5, 7	Ch. 8 Transmission Lines Sec. 8-1 Prob. 1, 5, 6 Sec. 8-3 Prob. 1, 3, 5 Sec. 8-4 Prob. 1, 3, 4, 5
Ch. 2 Fourier and Spectrum Analysis Sec. 2-3 Prob. 1, 3, 5 Sec. 2-6 Prob. 1	Ch. 9 Propagation and Antennas Sec. 9-2 Prob. 1, 3 Sec. 9-3 Prob. 1, 3 Sec. 9-6 Prob. 1, 3 Sec. 9-7 Prob. 1, 5
Ch. 3 Decibels and Noise Sec. 3-2 Prob. 1, 3, 5, 7 Sec. 3-3 Prob. 1, 3	Ch. 10 Digital Information Sec. 10-2 Prob. 3 Sec. 10-3 Prob. 1, 3
Ch. 4 Amplitude Modulation Sec. 4-2 Prob. 1, 3 Sec. 4-3 Prob. 1, 3, 4, 6 Sec. 4-5 Prob. 1	Ch. 11 Digital Communications Fundamentals Sec. 11-2 Prob. 3, 5 Sec. 11-3 Prob. 3, 4
Ch. 5 Receivers for AM Sec. 5-3 Prob. 1 Sec. 5-4 Prob. 1 Sec. 5-5 Prob. 1, 3	Ch. 12 Digital Communications Systems
Ch. 6 Frequency and Phase Modulation Sec. 6-2 Prob. 1, 4, 5, 8	
Ch. 7 Wire and Cable Media Sec. 7-2 Prob. 1, 3 Sec. 7-3 Prob. 1, 3, 5	

Projects

- 1) AM-FM Radio: Elenco Model AM/FM-108K