PENNSYLVANIA COLLEGE OF TECHNOLOGY

COURSE SYLLABUS

Dates:
08-19-92 Preparation
07-20-93 Revision 1
02-18-94 Revision 2
_____ Revision 3

Course Number: EET 280

Course Title: Analog Communications

Curriculum:

This course is intended for use in the Electronics Engineering Technology curricula, at the associate degree level in the Communications / Fiber Optics (FO) specialty. It is also included in the Transportation Technology Division's Avionics Technology (AN) curriculum, at the associate degree level. It may also be used at the baccalaureate level, as a lower division course in the proposed Electronics program.

Division: Industrial and Engineering Technologies

Prerequisites: EET 150, EET 152

Corequisites: Recommend concurrent enrollment in associated laboratory course EET 281.

Course Description

Analysis of amplitude, frequency and phase modulation and demodulation circuits. Operation of radio transmitters and receivers. Single and double sideband, video, and data communications circuits and systems. Introduction to transmission lines, antenna theory, and electromagnetic wave propagation. 3 Cr. (3-0). Prerequisites: EET 150, EET 152. Corequisite: Recommend concurrent enrollment in associated laboratory course EET 281.

Elective Status

Restricted to students in AN, AI, BI, CM, EG, FO, and LS associate degree programs, as well as all baccalaureate Engineering Technology programs.

Core Competencies

Upon successful completion of this course, the student will demonstrate command of the following core competencies:

Apply scientific reasoning
Demonstrate systematic planning skills
Use mathematics systematically to evaluate and solve problems
Evaluate the function and impact of technology

COURSE SYLLABUS: EET280

Course Competencies

Upon successful completion of this course, the student will demonstrate the following course competencies:

1. Perform link analysis of an electromagnetic communications system.

2. Evaluate modulation and demodulation alternatives.

3. Mathematically describe the propagation of electromagnetic waves through transmission lines and free space.

4. Troubleshoot electronic communications systems at both the block diagram and the circuit levels.

Logistics 3 credits - 48 hours of theory.

Text

Modern Electronic Communication. Fourth Edition, by Gary W. Miller, (c) 1993, Prentice/Hall International, Englewood Cliffs NJ.

Student Outcomes

The student can expect three unit examinations, and no fewer than ten weekly quizzes. In addition, homework problems from the textbook and computer-based learning tasks will be assigned on a weekly basis.

Evaluation

Weekly Quizzes	25%
Unit One Exam	25%
Unit Two Exam	25%
Unit Three Exam	25%

A	=	86 – 100	%
B	=	76 – 85	%
C	=	66 – 75	%
D	=	51 – 65	%
F	≤	50	%

Attendance Policy

The College Policy on Attendance will apply to this course. Daily attendance records will be maintained by the instructor.

Crosswalk This course replaces ENT 280.

PENNSYLVANIA COLLEGE OF TECHNOLOGY

COURSE SYLLABUS

Dates:
08-19-92 Preparation
08-31-93 Revision 1
02-18-94 Revision 2
_____ Revision 3

Course Number: EET 281

Course Title: Analog Communications Lab

Curriculum;

This course is intended for use in the Electronics Engineering Technology curricula, at the associate degree level in the Communications / Fiber Optics (FO) specialty. It may also be used at the baccalaureate level, as a lower division course in the proposed Electronics program.

Division: Industrial and Engineering Technologies

Prerequisites: EET 151, EET 153.

Corequisites: Prior or concurrent enrollment in associated theory course EET 280.

Course Description

Measurement and analysis of communications circuits, including oscillators, rf amplifiers, mixers, multipliers and detectors. Analysis of analog modulation and demodulation circuits. Laboratory measurements in the time and frequency domains. Problems associated with radio frequency circuits are explored. 1 Cr. (0-3). Prerequisites: EET 151, EET 153. Corequisite: EET 280.

Elective Status

Restricted to students in AI, BI, CM, EG, FO, and LS associate degree programs, as well as all baccalaureate Engineering Technology programs.

Core Competencies

Upon successful completion of this course, the student will demonstrate command of the following core competencies:

Identify a problem
Define and evaluate alternative solutions
Demonstrate systematic planning skills
Use mathematics systematically to evaluate and solve problems
Communicate in team atmosphere

COURSE SYLLABUS: EET 281

Course Competencies

Upon successful completion of this course, the student will demonstrate the following course competencies:

1. Characterize amplifiers, oscillators, mixers and detectors.
2. Evaluate amplitude and frequency modulation parameters.
3. Prepare amplitude and phase Bode plots for active and passive filter networks.
4. Troubleshoot electronic communications circuits.

Logistics

1 credit - 48 hours of laboratory.

Text

Anacom 1 Users Manual and Anacom 2 Users Manual, by L J. Electronics, L. J. Technical Systems Ltd., Norwich England (provided in the Laboratory).

Student Outcomes

The student will perform and document no fewer than ten laboratory experiments, and can expect three individualized lab tests. In addition, the student will perform independent library research on a current electronic communications topic, and prepare and deliver to the class an oral report on that topic.

Evaluation

Lab Experiments	25%
Lab Tests	25%
Written Lab Reports	25%
Oral Presentation	25%
	100%

A	=	86-100	%
B	=	76-85	%
C	=	66-75	%
D	=	51-65	%
F	≤	50	%

Attendance Policy

The College Policy on Attendance will apply to this course. Daily attendance records will be maintained by the instructor.

Crosswalk

This course replaces ENT 282.