Miami Dade College

GENERAL INFORMATION	
Course Prefix/Number: EET2323C	Course Title: **Electronic Communications 1 - Analog**
Number of Credits: 4 credits	
Degree Type	☐ B.A. ☐ B.S. ☐ B.A.S ☒ A.A. ☐ A.S. ☐ A.A.S. ☐ C.C.C. ☐ A.T.C. ☐ V.C.C
Date Submitted/Revised: 4/7/11	Effective Year/Term: 2012-2
☐ New Course Competency	☒ Revised Course Competency
Course Description (limit to 50 words or less): This course is designed for students majoring in Electronics Engineering Technology, Telecommunications Engineering Technology, and related disciplines. Students will learn the principles of radio wave transmission and reception, including AM and FM transmitters, receivers, single sideband, television and digital data transmission lines, wave propagation antennas and microwaves. Laboratory fee. (2 hr. lecture; 4 hr. lab)	
Prerequisite(s): EET1141C	Corequisite(s): EET2101C

Competencies:

Competency 1:
The student will demonstrate an understanding of the concepts of a communication system by:

1. Describing the basic building blocks of a communication system and their functions.
2. Explaining the need for modulation/demodulation in a communication system.
3. Defining communication terminologies, such as decibel (dB), noise, signal-to-noise ratio (S/N), information, bandwidth, etc.
4. Analyzing the frequency spectra using Fourier analysis.

Competency 2:
The student will demonstrate an understanding of amplitude modulation (AM) transmission by:

1. Describing the process of amplitude modulation.
2. Explaining the meaning of modulation index and its use in AM calculations.
3. Describing the AM generator circuit.
4. Describing high- and low- level modulation systems.

Competency 3:
The student will demonstrate an understanding of AM reception by:

1. Defining fundamental concepts of a radio receiver, such as sensitivity and selectivity.
2. Describing the operation of a diode detector in an AM receiver.
3. Sketching block diagrams for tuned radio frequency (TRF) and super heterodyne receivers.
4. Analyzing the image frequency, radio frequency (RF) and intermediate frequency (IF) amplifiers in super heterodyne analysis.

Revision Date:
Approved By Curriculum Report: 92 Reviewed By Director of Academic Programs Date: _____

5. Explaining the need for automatic gain control (AGC).

Competency 4:
The student will demonstrate an understanding of single sideband (SSB) communication by:

1. Discussing SSB characteristics and its advantages compared to AM.
2. Explaining the SSB generator circuits.
3. Describing SSB demodulation techniques.
4. Sketching a complete block diagram of an SSB transmitter and receiver.

Competency 5:
The student will demonstrate an understanding of frequency modulation (FM) transmission by:

1. Defining angle, frequency, and angle modulation.
2. Describing various direct and indirect FM generator circuits.
3. Describing the phase-locked-loop (PLL) FM transmitter.
4. Analyzing an FM signal with respect to modulation index, sidebands, and power.
5. Using phasor and S/N to describe the noise suppression of capability of FM.
6. Comparing FM to SSB and/or AM.
7. Explaining the multiplexing technique that enables stereo on a standard FM system.

Competency 6:
The student will demonstrate an understanding of FM reception by:

1. Describing the operation of an FM receiver and comparing it to AM.
2. Describing how the PLL FM demodulator functions.
3. Discussing and comparing various FM discriminators.
4. Sketching the block diagram of a stereo FM receiver.