MARICOPA COMMUNITY COLLEGES

Digital Data Communications

Course: **ELE263**	Lec + Lab **4** Credit(s) **6** Period(s) **5.4** Load
	Course Type: **Occupational**
First Term: **2004 Fall**	Load Formula: **S**
Final Term: **Current**	

Description: Overview of modern telephone system. Telephone switching and modulation techniques. Familiarization with AM(amplitude modulation) and FM(frequency modulation) circuits. Operation of asynchronous and synchronous modems

Requisites: Prerequisites: A grade of C or better in ELE121 and ELE241.

MCCCD Official Course Competencies

1. Trace the signal flow of a typical telephone call from the point of origin to the point of destination. (I)
2. Describe a local telephone loop. (II)
3. Calculate required signal levels at any point on a telephone transmission line. (II)
4. Describe bandwidth requirements of a voice circuit. (II)
5. Identify and use, ASCII and EBCDIC transmission codes. (III)
6. Apply error correction codes and methods. (III)
7. Describe an RS232 interface. (IV)
8. Identify FSK, BPSK, QPSK and other standard systems. (V)
9. Identify digital modulation techniques. (VI)

MCCCD Official Course Outline

I. Overview of Telephone Network
  A. The DDD network
  B. Private line service
II. The Telephone Circuit
  A. The local loop
  B. Transmission lines
  C. Telephone parameters
III. Transmission Codes
  A. Standard Codes
    1. ASCII
    2. EBCDIC
  B. Error detection
  C. Error correction

IV. Serial Interfaces - RS232
  A. Pin nomenclature
  B. Signal sequence
  C. Typical modem specifications
V. Data Transmission With Analog Carriers
  A. FSK
  B. BPSK
  C. QPSK
  D. Others
VI. Digital Data Transmission
  A. Digital communications
  B. Digital Companding
  C. Delta modulation

Last MCCCD Governing Board Approval Date: **4/27/2004**