Last updated: 11/99

San Bernardino Valley College

Course Outline for ELECTR 158
MICROCOMPUTER OPERATIONS

I. CATALOG DESCRIPTION:
Department: Electricity/Electronics
ELECTR 158: Microcomputer Operation
1.5 hours lecture, 1.5 hours laboratory = 2 Units
**Catalog Description:** A survey course in the technical applications of the microcomputer systems including computer interconnections, system capabilities and limitations, flow charting, trouble isolation techniques and the use of microcomputers as calculating devices.
**Schedule Description:** A survey course in the technical applications of the microcomputer systems.
Prerequisite/corequisite: None

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS:
Upon completion of the course, students will be able to:
A. Apply their expertise in applied problem solving.
B. Define and describe the following:
    1. Computer logic
    2. Communicative paths
    3. Operating modes
    4. Commands
    5. Statements
C. Explain the computer's capabilities and limitations.
D. Show the computer's hardware layout.
E. Describe the computer's internal make-up.
F. Write a complete computer program from a skeleton program given at the beginning of the semester.

IV. CONTENT:
A. Computer Turn-On and Formatting a Diskette
    1. Computer turn-on in Windows and DOS
    2. Format a 3½-inch floppy diskette
B. Programming Basics
    1. Simple programming techniques
    2. Line numbering
    3. PRINT statements
C. Editing, Automatic Line Numbering, Renumbering Programs
    1. Edit command

2. Use of automatic line numbering system
3. Renumbering a complete program or sections of a program

D. Math Operators
1. Order of operations
2. Addition
3. Subtraction
4. Multiplication
5. Division
6. Squares and other exponents
7. Square roots and other roots

E. Input, Load, Save, and Remove Files From Disk
1. Input statements
2. Saving programs to disk
3. Loading programs from disk
4. Killing (removing programs) from disk

F. For-next Looping
1. Introduction
2. Nested loops
3. Making loops work for you

G. Integer Rounding
1. Place holder
2. Rounding techniques

H. Subroutines, Random Numbers
1. Calling subroutines
2. Generating random numbers
3. Syntax for the limits of random numbers

I. Reading Data, ASCII Numbers, and Play Command
1. Read statements and syntax
2. Data statements and syntax
3. Measuring string variables
4. The ASCII set
5. Sound statements and tones
6. The play command and music

J. Locate, Width, Center
1. Locate print lines on the monitor
2. Measuring strings
3. Choice of text width of 40 or 80 characters per line
4. Centering text on the monitor

K. Using a Printer and Print Using Statements
1. Rounding numbers using the “print using” statements
2. Printer connections
3. Printer actions

L. Color In Text Mode
1. Color commands
2. Border colors
3. Text colors

4. High intensity or normal intensity colors

M. Peek and Poke Statements
   1. Defining segments
   2. Peeking at information in memory cells
   3. Poking new information in memory cells

V. METHODS OF INSTRUCTION:

Methods of instruction will vary from instructor to instructor but may include:

A. Lecture
B. Videos and transparencies and class discussion
C. Hands-on activities and computer time

VI. TYPICAL ASSIGNMENTS:

Typical assignments will vary from instructor to instructor but may include:

A. Use a computer to solve simple and complex math problems.
B. Write simple computer programs to solve various electronic circuit problems.
C. Describe the principles of sequential programming.

VII. EVALUATION(S):

A. Methods of evaluation will vary from instructor to instructor but may include:
   1. Periodic feedback based on weekly quizzes
   2. Four (4) exams
      Typical Questions:
      a. How many bits in a byte?
      b. What is the seventh root of 78125?
   3. A completed resume using a word processor following proscribed criteria
   4. Write a complete computer program from a skeleton program given at the beginning of the semester
   5. One (1) comprehensive final exam
      Typical Questions:
      a. Explain the computer's capabilities and limitations.
      b. Describe the computer's internal make-up.

B. Frequency of evaluation will vary from instructor to instructor but may include:
   1. Quizzes
   2. End-of-chapter homework problems
   3. End-of-chapter tests
   4. Final exam

VIII. TYPICAL TEXT(S):

Introduction to Personal Computers for Technology Students. Prentice-Hall, Columbus, Ohio, 1994.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS:

3 ½"HD floppy disk, scantron answer forms (882 or 882E)