SECTION I

SUBJECT AREA AND COURSE NUMBER

OFSY 517

COURSE TITLE

TELECOMMUNICATIONS

TYPE COURSE

NON-FEE   VOCATIONAL

CATALOG COURSE DESCRIPTION

This course is an introduction to telecommunications and the microcomputer. Instruction includes the use of modems, networks, public database systems, commercial services, electronic mail, electronic scheduling, bulletin boards, shared networks, and file transfer. (FT)

LECTURE/LABORATORY HOURS

    54

NOTE: In order to earn one (1) unit of high school credit, students will be required to complete an additional 16 hours of work in an open lab for a total of 70 hours.

ADVISORIES

NONE

RECOMMENDED SKILL LEVEL

Eighth grade reading level, ability to communicate effectively in the English language.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
   SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
   SDCE students demonstrate effective communication skills.
3. Critical Thinking
   SDCE students critically process information, make decisions, and solve problems independently or cooperatively.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

4. Personal and Professional Development
    SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self advocacy skills to cope with changing situations in their lives.

COURSE GOALS

Introduce the terminology, concepts, and operational and technical aspect of telecommunications using microcomputers alone and with networks. Demonstrate and provide practice in selecting and working with communications hardware such as modems, facsimile machines, voice messaging, shared resources, computer connections, wireless technologies, communication software, databases, voice messaging, electronic mail, electronic bulletin boards, groupware, the Internet, and commercial services, if available. Demonstrate, if possible, a variety of related software tools for specific tasks involving sending and receiving data using voice, data lines, or video. Present and/or demonstrate and provide hands-on practice, if available, for data transmission such as capturing information (reviewing, editing and sending data), uploading and downloading files in various formats, file compression and preparing files to be sent using e-mail. Present trends in the evolution, deregulation, expansion, enhancement, integration, standardization of protocols, connectivity, multimedia and use of storage media (i.e. a Zip disk, CD ROM, flash or thumbnail drive) in connection with networks. Present the ethics issues of security, privacy, access and computer crime and how it affects technology.

COURSE OBJECTIVES

1. Use knowledge of telecommunications, computer and network terminology to describe key concepts.
2. Demonstrate use of microcomputers and networks: logging on and off, safe and proper use of hardware and software (applications and operating system or windows environment).
3. Demonstrate file management using an operating system and/or a windows environment.
4. Describe procedures for installing communications software. (Configure and install a communications software application, if possible.)
5. Describe (and demonstrate, if available) ability to select and work with communications hardware such as modems, computer connections including wireless, communications software and utilities.
6. Describe (and use, if available) the various communications tools to perform specific tasks (send and receive e-mail, access an electronic bulletin board or on-line service, Internet, facsimile (fax) machine, or other peripherals or related software).
7. Describe (and demonstrate, if available) capturing information on a specific topic found on several remote computers, and print selected portions of the information for use by others.
8. Describe (and use, if available) cost-effective procedures for file transfer including file compression.
9. Describe (and transmit, if available) fax messages.
10. Describe (or connect if available) logging on to the Internet; use some of its features (e-mail, telnet, ftp, gopher, www, news groups) and evaluate its usefulness.

COURSE OBJECTIVES (CONTINUED)

11. Describe how, or perform research on (if available), a specific topic on the Internet or on several remote sources.
12. Describe (or use, if available) Internet utilities such as ping, finger, host hookup.
13. Demonstrate knowledge of the ethics issues of security, privacy, access and computer crime and how it affects technology.

SECTION II

COURSE CONTENT AND SCOPE

1. Overview
    1.1. Concepts, terminology, technical, operational and practical use of telecommunications in modern technology
        1.1.1. Devices to generate (encode) data
        1.1.2. Devices, technology to transmit and receive data
    1.2. Types of data communications systems
        1.2.1. Voice
        1.2.2. Data
        1.2.3. Video
2. Hardware and Software Requirements
    2.1. Hardware
    2.2. Types of computers (microcomputers, mini computers, mainframes)
        2.2.1. Terminals (smart, intelligent, dumb)
        2.2.2. Computer components (speed, memory, storage, expansion slots)
        2.2.3. Peripherals: modems, fax machines, printers
        2.2.4. Networks
        2.2.5. Types of networks: local area networks (LAN), wide area networks (WAN), value-add networks (VAN), integrated services digital network (ISDN), supernet
            2.2.5.1. Network configurations (star, bus, ring)
            2.2.5.2. Network terminology (node, client, server, peer-to-peer, distributed processing, host computer)
    2.3. Software
        2.3.1. Communications software needed to interface with local area networks or remote computers
        2.3.2. Operating systems, windows environments
3. Connectivity
    3.1. Microcomputer
        3.1.1. Accessing computer (logon, logoff)
        3.1.2. Safe and correct use of hardware
        3.1.3. Trouble-shooting techniques
    3.2. Communications software and utilities
        3.2.1. Accessing, passwords
        3.2.2. Exiting

COURSE CONTENT AND SCOPE (CONTINUED)

    3.3.   Local Area Network (LAN)
        3.3.1. Logging on, logging off, accessing a file server
        3.3.2. Sending data to a selected printer
        3.3.3. Commercial channels: wire, microwave, satellite, coaxial cable, fiber optic cable, modulated lasers, ISDN
    3.4.   On-line, commercial services (proprietary databases), teleshopping, electronic bulletin boards, electronic mail, voice messaging, video transfer, shared resources using networks and the Internet
    3.5.   Internet
        3.5.1. Logon, logoff, using protocols, passwords
        3.5.2. Establishing access
        3.5.3. Security issues
4.   Data Transmission
    4.1.   Bandwidth, serial, parallel transmission, direction of data
    4.2.   Modes of transmitting data (asynchronous, synchronous)
    4.3.   Protocols using commercial services
        4.3.1. Electronic mail: reading, replying, originating new messages, sending and receiving files
        4.3.2. Bulletin boards: reading, uploading and downloading files
    4.4.   Protocols using the Internet
    4.5.   Features
        4.5.1. Electronic mail
        4.5.2. Telnet
        4.5.3. File transfer protocol (ftp)
        4.5.4. Gopher
        4.5.5. World wide web (www)
        4.5.6. News groups (usenet)
    4.6.   Utilities
        4.6.1. Ping
        4.6.2. Finger
        4.6.3. Host lookup
    4.7.   Capturing information
        4.7.1. File compression
        4.7.2. File transfer
        4.7.3. Transferring information using a fax machine

APPROPRIATE READINGS

Appropriate readings may include, but are not limited to, textbooks, supplemental reading assignments, industry-related periodicals or magazines, manuals; on-line help, commercial services, bulletin boards, and electronic mail.

WRITING ASSIGNMENTS

Writing assignments may include, but are not limited to, providing written answers to assigned questions related to data or telecommunications, outlining procedures, taking notes, maintaining a notebook/portfolio of class assignments and class projects, being a recorder for a group project, preparing an oral presentation from related information, create files to be sent as electronic mail using word processing software or a text editor, create messages to be sent using a fax machine, research a topic on the Internet and prepare a report, capture information on a specific topic found on several remote computers and print selected portions of the information for use by others.

OUTSIDE ASSIGNMENTS

Outside assignments may include, but are not limited to reading, researching material related to telecommunications from a variety of resources, preparing written assignments, completing assigned projects alone or with a group, and interviewing a data communications operator or someone knowledgeable about telecommunications in business, work in teams to complete an assigned task; contribute to class by teaching others and/or by preparing instructions for others. Research the operation of electronic communication systems (bulletin boards, Internet, commercial databases) and suggest improvements in existing systems. Select equipment and software (including utilities) for telecommunications; use the tools for specific tasks and troubleshoot telecommunications problems.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Assignments which demonstrate critical thinking may include, but are not limited to, written and oral analysis and evaluation or readings and/or classroom material, class discussions of readings, lectures, analyzing problems and determining if telecommunications can be used to solve them, and understanding the capabilities and limitations of various telecommunications software.

Evaluate operations and recommend changes that will improve service to customers, increase sales, reduce costs and that would assist a business in incorporating current technology. Discuss obstacles to development of integrated systems such as resistance to change, standards, and special equipment. Explore future trends such as deregulation, expansion, enhancement of networks, movement toward Integrated Services Digital Networks, wireless technology, growth of voice synthesis and use of optical storage and discuss how it will affect developing telecommunication technologies.

EVALUATION

Evaluation methods may include, but are not limited to, performance in a variety of activities and assignments, such as:

1. Written and practical tests.
2. Completion of assigned exercises.
3. Attendance and punctuality.
4. Completion of performance competencies.

EVALUATION (CONTINUED)

5.   Participation in class and team work.

Upon successful completion of each individual course a Certificate of Course Completion will be issued. Upon successful completion of all courses included in the program a Certificate of Program Completion will be issued.

METHOD OF INSTRUCTION

Methods of instruction will include, but are not limited to, lecture, lab, demonstration, individualized study, use of audio-visual, tutorials, group and team work. Other unique instructional strategies, such as, field trips, and computer access, may be utilized.

TEXTS AND SUPPLIES

Texts used must be current and relevant to the course such as:

Discovering the Internet: Complete Concepts and Techniques, Shelly Cashman, latest edition

PREPARED BY ___Joan Wells_____   DATE __August 23, 1995_____

REVISED BY _____Sharian Lott_____   DATE _____February 22, 2007__

REVISED BY _Instructional Services/SLO's Added___   DATE _____April 25, 2013____

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog