Miami Dade College

GENERAL INFORMATION

Course Prefix/Number: CET1171	Course Title: Introduction to Computer Service and Maintenance
Number of Credits: 3	

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: 02-27-2007	Effective Year/Term: 2007-1
☐ New Course Competency	☒ Revised Course Competency

Course Description

This course is designed as an introduction for students new to IT. Students will learn about the history, design, construction, and maintenance of microcomputers, including the proper handling and use of computer components and tools; how to assemble and disassemble computers; how to perform preventive maintenance; how to identify and upgrade components; how to interpret error messages; and how to perform basic troubleshooting. Laboratory fee. A.S. degree credit only. (3 hr. lecture)

Prerequisite(s):	Corequisite(s):

Course Competencies:

Competency 1: The student will demonstrate an understanding of the development of the Microcomputer by:

1. Describing the historical development of the microcomputer.
2. Describing the evolution of industry standard architecture.
3. Identifying the major microcomputer hardware platforms and manufacturers.
4. Identifying the major system components, including video display, keyboard, hard drive, floppy drive, optical drive, and describing how they are incorporated into the microcomputer.
5. Describing how computers and operating systems are designed to work together.
6. Interpreting computer industry standard acronyms.

Competency 2: The student will demonstrate an understanding of electronic digital computer fundamentals by:

1. Describing the electrical properties of matter.
2. Defining voltage, resistance, impedance, current, and circuits.
3. Describing how data is stored and processed in a computer.
4. Explaining the use of binary numbers to represent instructions and data.
5. Describing the hardware implications of the use of binary representation of instructions and data.
6. Converting numbers among decimal, binary, and hexadecimal representation.
7. Performing binary arithmetic.
8. Identifying various coding schemes and data types.

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Approved By Academic Dean Date: _____   Reviewed By Director of Academic Programs Date: _____

Competency 3: The student will demonstrate an understanding of microcomputer architecture by:

1. Describing the basic design of industry standard architecture.
2. Drawing and explaining system configurations in block detail.
3. Describing the concepts of input, processing, memory, output, and storage.
4. Describing the functions of the system circuitry, including the data bus, address bus and the control bus.
5. Describing the system functions of memory, IRQs, I/O Ports, and DMA channels.
6. Identifying motherboard components and describing their functions.
7. Distinguishing between the popular CPU chips in terms of their basic characteristics.

Competency 4: The student will demonstrate an understanding of safety, preventive maintenance, and environmental issues in the servicing of computers and other electronic equipment by:

1. Identifying safety standards, procedures and risk management protocols.
2. Describing the dangers of electricity and other hazards to persons and equipment.
3. Demonstrating safety measures and procedures regarding Electrostatic Discharge (ESD).
4. Discussing environmental protection measures and procedures.

Competency 5: The student will demonstrate an understanding of computer system components by:

1. Identifying the names, purposes, and characteristics of system modules.
2. Describing how each component functions within the system.
3. Identifying the names, purposes, and performance characteristics of standardized and common peripheral ports, associated cabling, and their connectors.
4. Describing the procedures for identifying, handling, tagging, storing and transporting computer components.

Competency 6: The student will demonstrate the ability to disassemble and reassemble computer systems by:

1. Describing the procedures for identifying, installing, and removing field replaceable units.
2. Identifying the various computer chassis (case) form factors, power supplies, and internal wiring and connections, describing the methods of disassembly and reassembly.
3. Identifying the various motherboard form factors.
4. Demonstrating how to remove and insert the CPU and memory modules, and the motherboard into the case.
5. Identifying the various adapter cards that may be inserted into motherboard expansion slots, and demonstrating the methods of removal and installation.
6. Identifying, removing, and installing the various internal drives and components that may be installed in the case.
7. Performing a total disassembly of a computer system, identifying and inventorying the components, reassembling, and testing the unit.

Competency 7: The student will demonstrate the ability to identify and conduct regular system maintenance procedures by:

1. Identifying the various types of preventive maintenance measures, products and procedures and explaining when and how to use them.
2. Identifying and testing field replaceable units.
3. Selecting appropriate materials for cleaning the surfaces, electronic contacts, connections, and components of electronic devices.
4. Cleaning monitors and removable media devices.
5. Performing hard disk maintenance and data backup.
6. Performing system upgrades and virus scans.
7. Verifying power supply, UPS (Uninterruptible Power Supply), and surge suppressor functionality.
8. Describing and practicing proper disposal procedures that comply with safety and environmental guidelines.