COURSE TITLE: Introduction to Computer Hardware and Operation

COURSE NUMBER: SEC 100

I. MAJOR INSTRUCTIONAL OBJECTIVES:

Objective A: Understand the basic elements and functions of computer hardware and operating systems.
A-1 Describe safe work practices.
A-2 Describe basic tools of the trade.
A-3 Explore the basics of cases, form factors, power supplies, motherboards, PC expansion buses, processors, memory, BIOS, video, and cooling devices, input and output interfaces and devices
A-4 Describe and explain guidelines for installing devices.
A-5 Describe the various kinds of storage device interfaces and media and the associated performance characteristics

Objective B: Understand the components that make up a network.
B-1 Explain the purpose of network protocols, addressing and configurations.
B-2 Describe various networking media (cabling), both wired and wireless.
B-3 Explain basic techniques used for troubleshooting network connections.

Objective C: Understand issues associated with printers.
C-1 Explain concepts about selecting, installing, configuring, and managing printers.
C-2 Describe the different types of printers, printer languages, and the components that make up network printing.

Objective D: Understand the concepts about classifications for portable devices.
D-1 Describe the components in a notebook system including PC cards, batteries, and power management.
D-2 Explain techniques used in troubleshooting a portable device.

Objective E: Understand the basics of securing a computer system.
E-1 Explain how to protect against malware
E-2 Describe techniques used in social engineering attacks
E-3 Explain authentication techniques used to validate a user
E-4 Describe BIOS security features
E-5 Discuss encryption technologies
E-6 Describe techniques used to physically secure computer systems
E-7 Describe the purpose of a firewall.
Objective F: Understand basic concepts of system management.
F-1 Practice installing and managing applications
F-2 Update Windows and non-Microsoft software
F-3 Explain backup techniques used to protect a system
F-4 Describe management of virtual memory as it is used to protect a system
F-5 Explain the handling of system errors
F-6 Describe techniques used for providing system recovery for a system that does not work properly.
F-7 Examine decisions that should be made prior to operating system installation.
F-8 Examine methods to install a Windows operating system
F-9 Describe post installation tasks.

II. CLASS PARTICIPATION:
Students are expected to attend class and participate actively and in a positive way. Questions and relevant observations are encouraged and enrich the experience of the entire class. Computers in the classrooms are intended to be used as tools to enhance the students' learning experience. Instant messaging, gaming, emailing, and surfing the web are distractions to the student, the surrounding students, and the instructor and constitute inappropriate behavior. Students are ethically obliged to avoid these and similar practices.