**General Information**

**Date**
04/12/2017

**Department**
Computing Sciences

**Course Prefix:**
CSC

**Course Number:**
271

**Course Title:**
A+ Hardware and Operating Systems Technologies

**Course Information**

**Credit Hours**
3

**Lecture Contact Hours**
3

**Catalog Description**

A+ Hardware and Operating Systems Technologies is a course designed to prepare students to successfully complete the CompTia A+ Exams. CompTia A+ exams are generalized exams designed to evaluate the knowledge and skills of entry level computer professionals. While completion of the test is optional, many employers look to the certification as proof of the skills of perspective employees. (Currently following the 2009 exams as amended 1/11.) This course requires students to assemble, repair, configure and optimize modern computer systems. Students will be given a broad overview of computer systems, problems and solutions, which may be encountered during employment. Emphasis will be made to allow students to experience actual challenges with a computer, and design their solution.

**Grading Scheme**

Letter Grade

**FLCC Values**

**College Learning Outcomes Addressed by the Course**

Vitality
Perseverance

**Course Learning Outcomes**
Course Learning Outcomes

1. Build (i.e. assemble, install, and configure) PCs to meet customer requirements/needs.
2. Develop troubleshooting and diagnostic skills for common hardware and software issues.
3. Demonstrate safety and handling skills while interacting with computer components.
4. Practice documentation skills throughout the process of managing and maintaining computer systems.

Program Affiliation

This course is required as a core program course in the following program(s)

AAS Information Technology

Outline of Topics Covered

Outline of Topics Covered

1. Introducing Hardware
   a. Hardware Needs Software
   b. PC Hardware Components
   c. Binary/Hex/Decimal Conversions
2. Introducing Operating Systems
   a. Operating Systems Past and Present
   b. How the Windows Operating Systems Work
3. Working with People in a Technical World
   a. Job Roles and Responsibilities
   b. What Customers Want, Beyond Technical Know-How
   c. Planning for Good Service
4. Electrical Requirements and Working Safely with Electricity
   a. Measures and properties of Electrical Devices
   b. Protect Yourself and the Equipment
   c. How to Work Inside of the Computer Case
   d. Troubleshooting Electrical Systems
5. Motherboards, Processors, Memory and Hard Drives
   a. Motherboard Types and Features
   b. Startup BIOS and Controlling the Boot Process
   c. Maintaining, Installing and Configuring Motherboards, RAM and Hard Drives
   d. Selecting and Installing a Processor
   e. Upgrading and selecting RAM
   f. Troubleshooting Motherboards, Memory, and Hard Drives
6. Installing and Supporting Input/Output Devices
   a. Installing I/O Devices
   b. Configuring I/O Devices
   c. Troubleshooting I/O Devices
7. Installing Operating Systems
   a. How to plan for a Operating System Installation
   b. Selecting a Operating System
   c. Optimizing a Operating System
   d. Deploying the features of the Operating System
8. Repairing and Avoiding Problems with a Modern Computer System
   a. Fixing Problems Caused by Hardware
   b. Fixing Problems Caused by Software Applications
   c. Networking Technologies and Securing Computers on a Network
   d. Connecting to the Internet and deploying Firewalls and Anti-malware Software
   e. Controlling Access to Computer Resources
   f. Maintaining and Troubleshooting Printers
   g. Fixing and securing Portable Computer Systems