



Syllabus

CSC 271 Hardware and Operating Systems

General Information

Date

February 20th, 2019

Author

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Department

Computing Sciences

Course Prefix

CSC

Course Number

271

Course Title

Hardware and Operating Systems

Course Information

Credit Hours

3

Lecture Contact Hours

3

Lab Contact Hours

0

Other Contact Hours

0

Catalog Description

Hardware and Operating Systems is a course designed to prepare students to successfully earn CompTIA's A+ certification. 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. Emphasis will be made to allow students to experience actual challenges with a computer, and design their solution.

Prerequisites

None

Co-requisites

None

Grading Scheme

Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

None

Course Learning Outcomes

Course Learning Outcomes

1. Build (ie. 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

AAS Computer Information Technology

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