

# COMPUTER SERVICE TECH-HARDWARE (631)

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Information provided includes course descriptions by subject only. For complete 2018-2019 programs/academic plans, please refer to Academic Programs (<http://catalog.blackhawk.edu/academics>).

## 631-100 Microcomputer Fundamentals Credits: 3

This course covers the program environment and binary functionality of the personal computer. An in-depth look at PC component identification, use, and functions are then observed. The course relies heavily on hands-on construction and preparation of the PC hardware, followed by a review of the technical resources and proper troubleshooting methods. This course incorporates a hands-on lab and performance assessment, where students work with the instructor and one another to perfect their skills.

**Aid Code:** 10 - Associate Degree.  
Complete Course Listing

## 631-101 PC Software Fundamentals Credits: 3

This course familiarizes the learner with Windows and Linux operating systems, popular business applications, and computer virus eradication. Students will learn how to properly install, use and troubleshoot each operating system and software package – to include software detailing, software utilities, and licensing. This course will help to ready students for the IC3 certification along with the CompTIA A+ certification.

**Aid Code:** 10 - Associate Degree.  
**Co-requisites:** (631-100)  
Complete Course Listing

## 631-102 PC Peripherals and Troubleshooting Credits: 3

Students will apply the troubleshooting theory and repair various scenario-based problems involving computer hardware, software, and peripherals. Students will learn about the installation and setup of various computer peripherals, to include (but not limited to) various types of printers, scanners, and digital cameras.

**Aid Code:** 10 - Associate Degree.  
**Co-requisites:** (631-101) and (631-100)  
Complete Course Listing

## 631-103 Apple Devices and Operating Systems Credits: 3

The Apple Devices & Operating Systems course provides a comprehensive overview of several pieces of Apple hardware and operating systems. Students will learn the installation, configuration, and troubleshooting of the operating systems and hardware. Network installation, configuration, and troubleshooting will also be included.

**Aid Code:** 10 - Associate Degree.  
**Pre-requisites:** (631-112)  
Complete Course Listing

## 631-104 Cyber Ethics Credits: 3

In this course students will examine situations that are considered to be in a “gray” area that many IT specialists face on a daily basis. Students will evaluate the situations presented to them and determine the best action plan based on a set decision-making process.

**Aid Code:** 10 - Associate Degree.  
**Pre-requisites:** (631-111)  
Complete Course Listing

## 631-105 Helpdesk Fundamentals Credits: 3

The student will gain knowledge and experience in applying the techniques used in problem troubleshooting, end-user support and customer service. The student will also become familiar with and apply the tools used in user supply and help desk operations.

**Aid Code:** 10 - Associate Degree.  
**Pre-requisites:** 631-112  
Complete Course Listing

## 631-106 IT Customer Service Fundamentals Credits: 3

This course is designed to instruct students on the principles of service calls and customer relations skills needed for success as a field service technician. Practical interviews and role playing are included in this course, with emphasis on phone and electronic support skills based on an Information Technology environment.

**Aid Code:** 10 - Associate Degree.  
Complete Course Listing

## 631-107 Linux Operating Systems Credits: 3

An introduction to Linux desktop and server are covered. Topics include installation, administration, Linux commands, and troubleshooting. The learner will apply previous knowledge to set up a network that combines Linux, Windows, and Apple operating systems. This course prepares students for the CompTIA Linux+ certification.

**Aid Code:** 10 - Associate Degree.  
**Pre-requisites:** (631-123)  
Complete Course Listing

## 631-108 Manufacturing Communication Protocols Credits: 3

This hands-on course focuses on the principles of network data communications. Serial and parallel protocols, network topologies and cabling media will be explored. Time will be spent studying ethernet TCP/IP, CIP, and other industrial protocols such as DeviceNet and ControlNet. Students will configure and troubleshoot networks and discuss the importance of network security.

**Aid Code:** 10 - Associate Degree.  
**Pre-requisites:** (631-115 or 620-115)  
Complete Course Listing

### 631-109 Network Portfolio 1

**Credits:** 1

This is the first of two capstone courses for second year students. Students will create a portfolio based on a provided scenario. They will be required to provide items such as wireless assessments of the area, recommend required equipment, provide a Gantt chart, etc based on the knowledge they gained from the first semester. This is an individual project, and students will be able to use the portfolio to show to prospective employers.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (631-112)

Complete Course Listing

### 631-110 Network Portfolio 2

**Credits:** 1

This is the second course of a two part capstone portfolio project that will require students to add new features, equipment and theories based on the knowledge they have gained throughout the four semesters of the Manufacturing Information Technology Specialist program. Students will be able to apply their knowledge in areas such as Linux operating systems, advanced wireless networking, mobile device and virtual machine fundamentals as would be needed in various scenarios on a manufacturing shop floor. This portfolio will give students an organized record to share with prospective employers their knowledge and skills they have obtained throughout all their courses in this program.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (631-109)

Complete Course Listing

### 631-111 PC Hardware Assessment

**Credits:** 1

This is the first of a two part capstone course project that will require students to use the information that they have gained throughout the first semester to collaborate on a group project. Students will be expected to develop a plan to produce a computerized machine by assessing their hardware needs, types of processors, circuit boards and controllers to be used as well as understand budgeting and invoicing procedures. Students will be able to apply this planning phase of the project in the second semester course, PC Hardware Interfacing.

**Aid Code:** 10 - Associate Degree.

**Co-requisites:** (631-100) and (631-101)

Complete Course Listing

### 631-112 PC Hardware Interfacing

**Credits:** 1

This is the second of two part capstone course project that will require students to use information that they have gained throughout the second semester to collaborate on a group project. Students will combine the planning stage in the first semester capstone course, PC Hardware Assessment, to assemble a computerized machine, paying special attention to decision making as it pertains to choosing different operating systems and networking within a larger system. Students will also be expected to incorporate the ideals of Green IT (recycling) and cyber ethics throughout this production project.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (631-111)

Complete Course Listing

### 631-113 Virtual Machine Fundamentals

**Credits:** 3

This course is an introduction to virtual machines. Topics include various types of virtual machine software and their installation, administration, usefulness, and troubleshooting, as well as how these apply to IT and manufacturing.

**Aid Code:** 10 - Associate Degree.

**Co-requisites:** (631-107) and (631-114) and (631-121)

Complete Course Listing

### 631-114 Mobile Device Fundamentals

**Credits:** 3

This course first provides students with a hands-on exploration of different mobile device hardware to gain an understanding of their functions. Students will then examine the different operating systems that are used in today's devices. The remaining sections of the course take the student through mobile device management, networking, security, and troubleshooting.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (631-107)

Complete Course Listing

### 631-115 Network Fundamentals

**Credits:** 3

This course covers the basic theories and technologies involved in Local Area Networks (LAN) and Wide Area Networks (WAN). Students gain knowledge in cabling schemes, specific hardware and software types, protocols and OSI layers. Both the physical and logical aspects of networks will be studied, giving students the ability to apply basic entry level technician skills in common office environments and manufacturing LANs.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (631-111)

Complete Course Listing

### 631-116 Troubleshooting Shared Network Resources

**Credits:** 3

This course is designed to prepare the network technician for a variety of networked environments and focuses on the installation, configuration, and troubleshooting of network operating systems and network hardware. Security, resource sharing, cable installation, and troubleshooting are emphasized. The student will also create a basic network diagram and peer to peer network utilizing the operating systems installed on their lab PC.

**Aid Code:** 10 - Associate Degree.

**Pre-requisites:** (631-115)

Complete Course Listing

### 631-118 Green IT

**Credits:** 3

Green IT covers the history of the American Green Movement and definitions. We then examine policies and regulations, recycling laws and methods. We next examine how to make the data center, the office, and the organization "green," and what tools we can use to do this. Finally, the students are required to employ everything that they have learned and apply it by developing a plan for a scenario-based issue.

**Aid Code:** 10 - Associate Degree.

Complete Course Listing

**631-119 Wireless Networking 1****Credits:** 3

This course introduces the student to wireless fundamentals. As a hands-on course, students will cover basic wireless installation, implementation, and troubleshooting for various types of wireless networks. Some topics that will be discussed are RF Basics, wireless networking devices, and the 802.11 standard. This course will help prepare students for the CWTS (Certified Wireless Technology Specialist) certification.

**Aid Code:** 10 - Associate Degree.**Pre-requisites:** (631-103)

Complete Course Listing

**631-120****Credits:** 3

The Industrial Computer Applications course is designed to meet the need for foundational computer training in industrial occupations. Using a self-paced, modular format, the ICA course is flexible to meet the needs of students with varying backgrounds in computer usage. Topics covered include: PC parts identification (including communications ports), operating system usage, file management, word processing, spreadsheet usage, and Internet usage.

**Aid Code:** 10 - Associate Degree.

Complete Course Listing

**631-121 Wireless Networking 2****Credits:** 3

The Wireless Networking 2 course builds from the knowledge gained in Wireless Networking 1. The hands-on learning continues as students will focus on advanced RF Technologies, learn regulations and standards, implement network security, and perform a wireless network survey and install, as well as configure a building-wide wireless network. This course will help prepare students for the CWNA (Certified Wireless Network Administrator) certification.

**Aid Code:** 10 - Associate Degree.**Pre-requisites:** 631-119

Complete Course Listing

**631-122 Service Support Techniques****Credits:** 1

This internship-style course provides an opportunity for the student to experience on the job training in which they will be able to apply concepts, principles and skills gained throughout the Computer Service Technician program. Students will engage in on the job training in areas such as installing operating systems, troubleshooting hardware and software issues, as well as reconfiguring small and large networking systems. Students will gain the practical knowledge necessary to be able to work collaboratively and apply their knowledge in the workplace.

**Aid Code:** 10 - Associate Degree.**Pre-requisites:** (631-112)

Complete Course Listing

**631-123****Credits:** 3

Students will be introduced to various types of malicious software found throughout the Information Technology industry that infect various types of equipment. Through this course, they will be able to analyze malicious software, understand its functionality, and engage in removing the malicious software from several types of operating systems and machines.

**Aid Code:** 10 - Associate Degree.**Pre-requisites:** (631-111)

Complete Course Listing