

Northwest Arkansas Community College
Business and Computer Information Systems Division

Discipline Code

NTWK

Course Number

2053

Course Title

Microcomputer Hardware Support

Catalog Description

This course is designed to provide the skills of basic system management for a networked microcomputer system. The students will gain hands-on computer experience providing routine maintenance, installing components, connecting peripheral interface card and other expansion cards. Laptop and mobile device hardware and maintenance is also covered. Students completing this course will have begun the preparation necessary for success in the following industry-recognized certifications: CompTIA A+ 220-1001 (Core 1). (Note: Preparation for the A+ certifications should include NTWK 2053 and NTWK 2153) (Outside lab time will be required.)

Prerequisites

None.

Credit Hours

3

Contact hours

45

Load hours

3

Semesters Offered

Spring, On Demand

ACTS Equivalent

N/A

Grade Mode

A-F

Learning Outcomes

Students will:

- Identify PC mother board components
- Identify and install correct memory types for different motherboards
- Install and troubleshoot I/O devices
- Enumerate hard disk types and describe differences
- Identify PC form factor and power supplies
- Enumerate and discuss differences in motherboard types
- Utilize Windows- and DOS-based utilities for troubleshooting PC hardware difficulties
- Replace PC hardware components on assigned lab computers
- Completely construct a PC from the motherboard up by assembling the necessary components and installing the operating system

General Education Outcomes Supported

- Students will demonstrate technological fluency.

Standard Practices

Topics List

- Electrical and ESD safety
- Cases
- Power supplies
- Voltage, wattage, power fluctuations
- Motherboards
- CPUs
- CPU architecture
- Cooling systems
- Memory – ROM, RAM
- Adaptor cards
- Hard drives, SSDs, and other storage media
- RAID
- Ports, connectors, and cables
- Input devices
- Output devices
- Printers
- Computer assembly
- POST, BIOS, CMOS, UEFI
- Installing an operating system
- Installing third party software
- Upgrading hardware
- Preventive maintenance and troubleshooting
- Networking fundamentals
- Types of networks

- Network protocols and services
- Network devices
- Security devices
- Network cables
- Network addressing
- Network configuration
- Laptop components
- Mobile device components
- Email

Learning activities

- Students will build a functioning microcomputer.
- This course requires some in class, hands-on work and also additional hands-on work in a virtual or on-campus computer lab.

Assessments

- Homework
- Lab assignments
- Hands-On activities
- Quizzes
- Projects
- Exams
- Skills exams

Grading guidelines

- A = 90-100
- B = 80-89
- C = 70-79
- D = 60-69
- F = 59 & below

Revision Date

April 25, 2023