COURSE SYLLABUS

LAST REVIEW   Fall 2022

COURSE TITLE   CompTIA A+ Essentials

COURSE NUMBER   CRTE 0100

DIVISION   Career and Technical Education

DEPARTMENT   CRTE

CIP CODE   11.1006

CREDIT HOURS   3

CONTACT HOURS/WEEK Class: 1   Lab: 4

PREREQUISITES   None

COURSE DESCRIPTION

Students will gain the knowledge required to assemble components based on customer requirements, install, configure and maintain devices for end users. This course also covers the basics of networking and security/forensics, proper and safe diagnosis, resolve and document common hardware issues while applying troubleshooting skills.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:
https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. Students will be able to identify different types of PC hardware and peripherals
2. Students will be able to evaluate operating systems, application programs, and hardware.
3. Students will be able to demonstrate troubleshooting and repair personal computers.
4. Students will be able to demonstrate appropriate customer skills when interacting with customers.

TEXTBOOKS

http://kckccbookstore.com/

METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

I. Introduction to Personal Computer Hardware
    A.   Storage devices and backup media

B. Motherboard components, types and features
C. Power supply types and characteristics
D. Functions and characteristics of CPUs
E. Cooling methods and devices
F. Memory types, characteristics and their functions
G. Display devices and their characteristics
H. Installing and configuring peripherals and input devices
I. Functions and types of adapter cards
J. Installing, configuring, and optimizing laptop components
K. Installing and configuring printers

II. Introduction to Troubleshooting, Repair and Maintenance
A. Troubleshooting procedures for system units and components
B. Common hardware and operating system symptoms and their causes
C. Troubleshooting methods and tools for printers
D. Common laptop issues and appropriate basic troubleshooting method
E. Common preventative maintenance techniques

III. Introduction to Safety, Environmental, and Operational Procedures
A. Electrical hazards
B. Size, weight, and emissions hazards
C. Applying communication skills and professionalism in the workplace

IV. Introduction to Windows Operating Systems and Software
A. Microsoft's family of Windows operating systems and their features
B. Proper use of user interfaces
C. Process and steps to install and configure the Windows OS
D. Basics of boot sequences, boot methods and startup utilities

V. Introduction to Networking
A. Networking fundamentals
B. Networking technologies
C. Network hardware devices
D. Network transmission protocols
E. Network cables and connectors

VI. Introduction to Security
A. Basic principles of security concepts and technologies
B. Wired, wireless, and software security features

COURSE LEARNING OUTCOMES AND COMPETENCIES
Upon successful completion of this course, the student will:

A.   Identify basic computer components
   1. Identify the parts of a computer system.

B.   Illustrate the installation, configuration and troubleshooting of current operating systems
   2. Demonstrate proper troubleshooting techniques.

C.   Identify, install and troubleshoot computer processors
   3.   Identify different manufacturers processors.
   4.   Install a processor.
   5.   Troubleshoot basic processor failures.

D. Identify, install and troubleshoot memory
    6. Identify different types of memory.
    7. Install memory.
    8. Troubleshoot basic memory failures.

E. Identify, install and troubleshoot peripherals
    9. Identify different types of computer peripherals.
    10. Install common computer peripherals.
    11. Troubleshoot peripheral devices.

F. Identify, install and troubleshoot video components
    12. Identify different video card manufacturers.
    13. Install a video card.
    14. Troubleshoot video problems.

G. Identify, install and troubleshoot storage media
    15. Identify different types of storage media.
    16. Install storage media devices.
    17. Troubleshoot basic storage device failures.

H. Identify, install and troubleshoot input and output ports and cables
    18. Identify different ports and matching cables.
    19. Install cables.
    20. Troubleshoot port and cable issues.

I. Identify, install and troubleshoot printers
    21. Identify different types of printers.
    22. Install a printer and driver.
    23. Troubleshoot printer issues.

J. Identify, install, troubleshoot and configure basic networks and components
    24. Identify different types of networks.
    25. Identify different types of network devices.
    25. Install a network device.
    26. Identify network problems.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES
Student progress is evaluated through both formative and summative assessment methods.
Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES
Student Handbook
https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf

College Catalog
https://www.kckcc.edu/academics/catalog/index.html

College Policies and Statements
https://www.kckcc.edu/about/policies-statements/index.html

Accessibility and Accommodations
https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html.