COURSE SYLLABUS

LAST REVIEW   Spring 2021

COURSE TITLE   Computer Repair and Maintenance

COURSE NUMBER   CIST-0214

DIVISION   Career and Technical Education

DEPARTMENT   CIST

CIP CODE   15.1201

CREDIT HOURS   4

CONTACT HOURS/WEEK   Class: 4   Lab: 0

PREREQUISITES   CIST-0101 Computer Concepts and Applications

COREQUISITES   None

COURSE DESCRIPTION

This course is specially designed as an introductory course in computers and their hardware systems. Students will learn about motherboards, power supplies, memory, ports, video, storage devices, and maintaining the operating system.

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. Ergonomically safe setup: Demonstrate the ergonomically safe setup of a computer workstation (i.e. chair height, monitor height, keyboard position).

INSTITUTIONAL LEARNING OUTCOMES

☐ Communication
☐ Computation and Financial Literacy
☐ Critical Reasoning
☒ Technology and Information Literacy
☐ Community and Civic Responsibility
☒ Personal and Interpersonal Skills

TEXTBOOKS
http://kckccbookstore.com/

METHOD 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. Motherboards
   A. Identifying motherboards
   B. Research for manuals
   C. Components on the motherboard
   D. Installing a motherboard
   E. Identify the CMOS chip and version
   F. Motherboard CMOS setup
II. Supporting Windows OS
   A. Installing Windows
   B. Configuring Windows
   C. Monitoring System Performance
   D. Hardware Installations
   E. Windows Registry
   F. Computer auditing software
   G. Troubleshooting
III. Memory
   A. History of memory
   B. Types of memory
   C. Installing memory
   D. Troubleshooting memory
IV. Power Supply
   A. Construction of Power Supply's
   B. Identifying Power Supply connectors
   C. Required Power Supply needs
   D. Installing the Power Supply
V. Storage Devices
   A. Hard Drives
   B. Optical Drives
   C. Partitioning and formatting a drive
VI. Purchasing a PC or Building your Own
   A. Selecting a personal Computer to meet your needs
   B. Preparing to Build a PC
   C. Building your own PC
   D. Setting up the CMOS
   E. POST information
VII. Networking

      A.   An overview of Networks
      B.   Identifying the type of Network
      C.   Finding your Network Drivers
VIII.   Viruses, Disaster Recovery, and Maintenance Plan
      A.   Viruses and Other Computer Infestations
      B.   Preventive Maintenance
      C.   Drive Backup
  IX. Troubleshooting
      A.   Motherboards
      B.   Memory
      C.   Power Supply
      D.   Storage Devices
   X.   New Advances

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

A.   Describe different types of Motherboards.
    1. Describe different types of motherboards.
    2. Identify and research for motherboard manuals.
    3. Enter the setup program and make basic changes.

B.   Install an Operating System.
    4. Install an operating system.
    5. Identify the system requirements of an operating system.
    6. Use computer auditing software on the operating system.
    7. Monitor system performance.
    8. Backup the registry.

C.   Identify different types of memory.
    9. Identify different types of memory.
    10. Install system memory.
    11. Run simple memory diagnostic software.

D.   Identify components of a motherboard.
    12. Identify the components of a motherboard reinforcement.
    13. Describe the uses of the components on the motherboard.

E.   Explain the construction of a power supply.
    14. Explain the construction of a power supply.
    15. Identify power supply connectors.
    16. Estimate the requirements of the power supply
    17. Install a power supply.

F.   Describe the different types of hard drives.

18. Describe the different types of hard drives.
19. Partition and format a drive.
20. Install a drive.

G. Identify the different types of optical drives.
21. Identify the different types of optical drives.
22. Install an optical drive.

H. Explain the steps of purchasing a computer system.
23. Explain the steps of purchasing a computer system.
24. Research the components for a computer system.
25. Calculate the estimated cost of a computer system.

I. Explain the steps of building a PC.
26. Explain the steps of building a PC.
27. Build a basic computer system
28. Identify the different information displayed in POST.
29. Set up the CMOS.

J. Summarize a network.
30. Summarize a network.
31. Identify the components of a network.
32. Research for the drivers needed by a network.

K. Research for antivirus software.
33. Research for antivirus software.
34. Run antivirus software.
35. Backup a computer system.
36. Describe basic computer preventive maintenance.

L. Distinguish systemic methods of troubleshooting the computer.
37. Distinguish systemic methods of troubleshooting the computer.
38. Explain the use of flow charts in troubleshooting.
39. Use a flow chart in troubleshooting the different systems of the computer.

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.