COURSE SYLLABUS

LAST REVIEW Fall 2022

COURSE TITLE Advanced Operating Systems

COURSE NUMBER CRTE 0106

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 Operating Systems
   A. Introduction
II. Modern Operating Systems
   A. OS Characteristics and Concepts
   B. Types of Operating Systems
   C. Customer Requirements for an Operating System
   D. Operating System Upgrades
   E. Types of open source Operating Systems
   F. Microsoft Windows EULA
   G. Apple OS license
III. Operating System Installation
   A. Hard Drive Setup Procedures
   B. Custom Installation Options
   C. Boot Sequence Files and Registry Files
   D. Operating System Files Manipulation
   E. Directory Structures and Folder Options
   F. Screen Resolution and Video Drivers
   G. Slipstreaming methods
   H. Multiboot
IV. Navigate Windows
   A. GUI Navigation
   B. Command Line Tools
V. Control Panel Utilities
   A. Common to all Microsoft Operating Systems
   B. Unique Control Panel Utilities
VI. Client-Side Virtualization
   A. Purpose and Requirements of Virtual Machines
VII. Common Preventive Maintenance Techniques for Operating Systems
   A. Preventive Maintenance Plan
VIII. Basic OS Troubleshooting
   A. Apply Troubleshooting Process to Operating Systems
   B. Common Problems and Solutions for Operating Systems

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

A. Discuss the characteristics of a modern operating system
   1. Discuss the characteristics of an Operating System
   2. Determine the type of license of an Operating System.
   3. Differentiate between the different types of open source licenses.
   4. Locate multiple sources for acquiring an Operating System.
B. Compare and Contrast the different major operating systems
   5. Compare and contrast the major Operating Systems.
   6. Compare and contrast file structures of Operating Systems.
   7. Analyze customer requirements for an Operating System.
   8. Compare and contrast different Operating System licenses.
   9. Locate the support site for different Operating Systems.

C. Perform different Operating System installation techniques
   10. Compare and contrast methods to slipstream service packs and drivers into an installation disk.
   11. Demonstrate the ability to slipstream a service pack into an installation disk.
   12. Utilize a virtual disk to install an Operating System.
   13. Burn an iso of an Operating System to a disk.
   14. Install an Operating System over a network.

D. Demonstrate the ability to navigate Microsoft Windows
   15. Demonstrate the ability to utilize Microsoft Windows GUI.
   16. Demonstrate the ability to navigate from the command prompt.
   17. Demonstrate the ability to use proper syntax at the command prompt.
   18. Utilize the basic command line tools available.

E. Utilize Microsoft Windows control panel utilities
   19. Utilize the device manager.
   20. Utilize the administrators tools in the control panel.
   21. Utilize the mmc.

G. Utilize Client-Side Virtualization
   22. Install an Operating System in a virtual client.
   23. Utilize an Operating System in a virtualized environment.

H. Preform common preventative maintenance techniques on an Operating System
   24. Perform common preventative maintenance on an Operating System.

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.