



ITCT 111-A+ Hardware and Operating Systems 3 Credits
SYLLABUS

CATALOG DESCRIPTION

Introduction to PC hardware, peripherals, and operating systems. Includes problem diagnosis, troubleshooting processes, Windows utilization, and system optimization. May be preparation for industry certification exams.

Prerequisites: None

Semester Fall
 Offered:

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

GENERAL LEARNING OBJECTIVES

- I. To provide students with hands-on real world experience in the research, acquisition, construction, maintenance, and troubleshooting of modern personal computers.
- II. To provide students with a knowledge and understanding of operating systems, and the critical role operating systems play in maintaining and troubleshooting

personal computers.

- III. To equip students with a sound understanding of the concept of what it means to perform as a professional PC technician.

SPECIFIC LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to ...

1. Identify basic terms, concepts, and functions of system and field-replaceable modules, and carry out the essential procedures for their addition and removal (I) (L, T, I, A).
2. Describe common peripheral ports, associated cabling, and their connectors (I) (L, C).
3. Perform the proper procedures to install and configure both internal components and external peripheral devices, including the configuration of IRQ, DMA, and I/O address information (I) (L, T, C, I, A).
4. Suggest hardware-related methods for upgrading system performance, and when to replace basic subsystem components (I) (L, T, C).
5. Assess common symptoms and problems associated with personal computer systems, and how to troubleshoot and isolate problems (I, II) (L, T, C, I).
6. Incorporate good business and service practices for eliciting problem symptoms from customers (III) (L, C, I, A).
7. Implement preventive maintenance products and understand when they are appropriate for use (III) (L, T, I).
8. Select popular CPUs and motherboards for computer systems based upon their included components, installation requirements, and architecture (I) (L, T, I, A).
9. Recognize various printer components and perform essential printer administration. (I) (L, T).
10. Understand basic networking concepts, including how a network operates and the ramifications of repairs on the network. (I) (L, T, I).
11. Describe an operating system's functions, structure, supported file systems, file management, and directories. (II) (L, C, I, A).
12. Perform a basic installation or upgrade of a modern client operating system, including the ability to initiate installation from a variety of storage media (II) (L, T, C, I, A)..
13. Establish a network connection and Internet access using operating system capabilities. (II) (L, I, A).
14. Address and develop skills related to the objectives defined by the Computing Technology Industry Association (CompTIA) relevant to the A+ certification exams. These skills can be found at:
<http://www.comptia.org/certification/index.htm> (I, II, III) (L, T, C).
15. Utilize the knowledge to attempt successful completion of at least one of the CompTIA A+ certification examinations. (I, II, III) (L, T, I).

COURSE CHALLENGE PROCEDURES

This course may be challenged by taking and passing the CompTIA A+ certification examinations.