Course Outline for CNT 51A

COMPTIAS A+ ESSENTIALS CERT.

Effective: Fall 2010

I. CATALOG DESCRIPTION:
CNT 51A — COMPTIAS A+ ESSENTIALS CERT. — 2.00 units

Designed to take students from the just-a-user level to the I-can-fix-it level for most common PC hardware issues. This class covers the objectives for the CompTIA A+ Essentials exam number 200-701: Hardware; Troubleshooting, Repair & Maintenance; Operating Systems & Software; Networking; Security; Operational Procedure. In addition, students learn communication skills and professionalism required of all entry-level IT professionals. Students will have the knowledge and skills required to identify hardware, peripheral networking, system problems and employ basic troubleshooting methodology, and practice proper safety procedures.

2.00 Units Lecture

Strongly Recommended
CNT 50 - Introduction to Desktop Operating Systems

Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	36.00
No Unit Value Lab	18.00
Total Hours:	54.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 2

III. PREREQUISITE AND/OR ADVISORY SKILLS:

Before entering this course, it is strongly recommended that the student should be able to:

A. CNT50

IV. MEASURABLE OBJECTIVES:
Upon completion of this course, the student should be able to:

A. HARDWARE:
1. categorize storage devices and backup media
2. explain motherboard components, types and features
3. classify power supplies types and characteristics
4. explain the purpose and characteristics of CPUs and their features
5. explain cooling methods and devices
6. compare and contrast memory types, characteristics and their purpose
7. distinguish between the different display devices and their characteristics
8. install and configure peripherals and input devices
9. summarize the function and types of adapter cards
10. install, configure and optimize laptop components and features
11. install and configure printers
B. TROUBLESHOOTING, REPAIR AND MAINTENANCE
1. install and configure printers
2. explain and interpret common hardware and operating system symptoms and their causes;
3. determine the troubleshooting methods and tools for printers;
4. explain and interpret common laptop issues and determine the appropriate basic troubleshooting method;
5. integrate common preventative maintenance techniques
C. OPERATING SYSTEMS AND SOFTWARE –Unless otherwise noted, operating systems referred to within include Microsoft Windows 2000, Windows XP, Professional, XP Home, XP MediaCenter, Windows Vista Home, Home Premium, Business and Ultimate
1. compare and contrast the different Windows Operating Systems and their features;
2. demonstrate proper use of user interfaces;
3. explain the process and steps to install and configure the Windows OS
4. explain the basics of boot sequences, methods and startup utilities

D. NETWORKING
    1. summarize the basics of networking fundamentals, including technologies, devices and protocols;
    2. categorize network cables and connectors and their implementations;
    3. compare and contrast the different network types
E. SECURITY:
    1. explain the basic principles of security concepts and technologies;
    2. summarize Wireless encryption, Malicious software protection, BIOS Security, Password management/password complexity
F. OPERATIONAL PROCEDURE
    1. outline the purpose of appropriate safety and environmental procedures and given a scenario apply them;
    2. demonstrate the appropriate use of communication skills and professionalism in the workplace.

V. CONTENT:
A. Troubleshooting methodology
B. Operating systems
C. Electricity and power supplies
D. CPUs and motherboards
E. The Basic Input/Output System
F. Memory systems
G. Bus structures
H. Expansion cards
I. Peripheral connection types
J. Data storage devices
K. Video output and image input devices
L. Printers
M. Connecting computers
N. Networking computers
O. Portable computers
P. Monitoring and management
Q. Operating system troubleshooting
R. Security
S. Windows installation and upgrades
T. Safely and maintenance
U. Troubleshooting hardware

VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Discussion** -
C. A+ Exam practice questions
D. **Lab** - Laboratory assignments
E. Internet assignments

VII. TYPICAL ASSIGNMENTS:
A. Ensuring customer satisfaction: 1. Determine what you would include in your SLA (Service Level Agreement) for a small workgroup that needs support for basic hardware and commercial software. Compare your SLA with those of the other group. Create an SLA for a department that uses specialized hardware and custom applications, in addition to needing support for basic hardware and commercial software. B. Internet: 1. Research the newest CPUs and compare the speeds, architectures, buses and other relevant properties. C. Troubleshooting and repair methodologies: 1. What questions do you ask the customer? 2. What are the first things you check about a failed system and why? 3. At what point is a repair job finished and what are the last technical checks you do before you leave the premises?

VIII. EVALUATION:
A. **Methods**

B. **Frequency**

    1. Frequency
        a. Six to eight quizzes, laboratory
        b. Weekly Hands-on assignments
        c. Internet quizzes

IX. TYPICAL TEXTS:
1. Axzo *CompTIA A+ Certification: Essentials.*, Axzo Press, 2009.
2. Meyers, Michael *CompTIA A+ Guide: Essentials.* 3rd ed., Tata McGraw_Hill, 2010.
3. Mobile storage device: Flash drives, CD RW
4. PC hardware toolkit

X. OTHER MATERIALS REQUIRED OF STUDENTS: