

**Course Outline for CNT 51**

**COMPTIA'S A+ CERTIFICATION COMPUTER TECHNICIAN**

**Effective: Fall 2020**

**I. CATALOG DESCRIPTION:**

CNT 51 — COMPTIA'S A+ CERTIFICATION COMPUTER TECHNICIAN — 4.00 units

This course provides an introduction to the computer hardware and software skills needed to help meet the industry demand for entry-level PC Technicians. This course covers PC hardware, software, security, networking, laptops, printers, operational procedures, operating systems, security, troubleshooting, and mobile devices. The students will study the topics needed to become certified PC technicians. Preparation for the CompTIA A+ certification, which verifies knowledge equivalent to that of an entry-level ICT (Information and Communications Technology) technician with about 12 months of hands-on experience. The responsibilities of an ICT professional will be introduced.

3.00 Units Lecture 1.00 Units Lab

**Strongly Recommended**

CIS 50 - Introduction to Computing Information Technology with a minimum grade of C

**Grading Methods:**

Letter or P/NP

**Discipline:**

- Computer Service Technology

	<b>MIN</b>
<b>Lecture Hours:</b>	54.00
<b>Expected Outside of Class Hours:</b>	108.00
<b>Lab Hours:</b>	54.00
<b>Total Hours:</b>	216.00

**II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1**

**III. PREREQUISITE AND/OR ADVISORY SKILLS:**

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

A. CIS50

1. Solve common business problems using appropriate Information Technology applications and systems;
2. Demonstrate familiarity with the computing environment, including the hardware, operating system, the user interface, and applications;
3. Demonstrate the possible solution(s) for simple business applications by applying productivity tools including, word processing, spreadsheets, databases, and presentation software;
4. Investigate current issues in computer environments such as security, society and business ethics over the use of computer data, and organization of data processing resources within the organization; and

**IV. MEASURABLE OBJECTIVES:**

**Upon completion of this course, the student should be able to:**

- A. Build a personal computer, according to customer requirements
- B. Install, configure, and maintain devices, and PCs for end users
- C. Install and configure networking adapters, including the connectivity software
- D. Install, update, and configure the Windows OS
- E. Troubleshoot and document common hardware problems
- F. Deploy desktop imaging, and install a virtual machine on a computer, using different hypervisors
- G. Identify and explain system boards components, types and features
- H. Install and troubleshoot power supplies
  - I. Match specific CPUs to systems boards and install proper cooling devices
  - J. Select the correct memory types for specific expansion slots
- K. Choose and install display devices according to customer specifications
- L. Install and configure peripherals, input devices and printers

- M. Determine the troubleshooting methods and tools for printers
- N. Compare and contrast the different Windows Operating Systems and their features
- O. Secure a computer using anti-malware software and user access rights
- P. Harden a wireless access point security and train end user in basic security features
- Q. Practice the appropriate communication skills and professionalism needed to provide effective customer support

#### V. CONTENT:

- A. Safety of Staff and Equipment
- B. PC hardware, Internal Devices
- C. Peripheral Devices and Printers
- D. Electricity and Power Supplies
- E. System Boards, CPU and Memory
- F. Operational Procedures
- G. Laptops
- H. Operating Systems
  - I. Data Storage Devices
- J. Windows System Management
- K. File Management
- L. Security and Monitoring
- M. Mobile devices and Wireless Access Points
- N. Networking and Computer Hardening
- O. Troubleshooting
- P. Providing Effective Customer Support
  - 1. Communication Skills
  - 2. Professionalism in the Workplace
  - 3. Developing a Service Level Agreement (SLA)

#### VI. METHODS OF INSTRUCTION:

- A. **Discussion** -
- B. **Lecture** -
- 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 latest PC CPUs and compare them to the CPUs inside your home computers
- C. Troubleshooting and Repair Methodologies:
  - 1. What are the first questions you ask a customer?
  - 2. What are some of 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:

##### **Methods/Frequency**

- A. Exams/Tests
  - Weekly, One Midterm
- B. Quizzes
  - Weekly
- C. Simulation
  - Weekly
- D. Class Participation
  - Weekly, Online or On-site
- E. Final Class Performance
  - One Final

#### IX. TYPICAL TEXTS:

1. Meyers, Mike. *CompTIA A+ Certification All-in-One Exam Guide, Ninth Edition (Exams 220-1001 & 220-1002)*. 10 ed., McGraw-Hill Education, 2019.
2. Doctor, Quentin. *CompTIA A+ Complete Study Guide: Exam Core 1 220-1001 and Exam Core 2 220-1002*. 4th ed., Sybex, 2019.
3. Soper, Mark, and David Prowse. *CompTIA A+ Core 1 (220-1001) and Core 2 (220-1002) Exam Cram*. 2nd ed., Pearson, 2019.
4. TestOut.com LabSims Student Online Access TestOut PC Pro 2018 ed. Provo: TestOut.com, 2018.

#### X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Portable storage device; such as a flash drive or external USB drive