CompTIA A+ Course Agenda

Hardware

- ➢ Firmware upgrades/flash BIOS
- ➢ BIOS component information
- ➢ BIOS configurations

- ➢ Boot sequence
- ➢ Enabling and disabling devices
- ➢ Virtualization support
- ➢ BIOS security (passwords, drive encryption: TPM, LoJack, secure boot)
- ➢ Built-in diagnostics
- ➢ Monitoring

- ➢ Components, their purpose and properties.
- ➢ Sizes
- ➢ Expansion slots
- ➢ RAM slots
- ➢ CPU sockets
- ➢ Chipsets
- ➢ CMOS battery
- ➢ Power connections and types
- ➢ Fan connectors
- ➢ Front/top panel connectors

- ➢ Compare and contrast various RAM types and their features
- ➢ RAM configurations
- ➢ RAM compatibility

- ➢ Install and configure PC expansion cards.
- ➢ Install and configure storage devices and use appropriate media.

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➢ RAID types

➢ Install various types of CPUs and apply the appropriate cooling methods.
➢ Socket types
➢ Characteristics
➢ Virtualization support
➢ Architecture (32-bit vs. 64-bit)
➢ Integrated GPU
➢ Disable execute bit

➢ Cooling
➢ Heat sink, Fans, Thermal paste, Liquid-based, Fanless/passive

➢ Compare and contrast various PC connection interfaces, their characteristics and purpose.
➢ Physical connections, Wireless connections and Characteristics

➢ Connector types and their voltages
➢ Graphic/CAD/CAM design workstation
➢ Audio/video editing workstation
➢ Virtualization workstation
➢ Maximum RAM and CPU cores

➢ Multicore processor
➢ Standard thick client
➢ Thin client
➢ Network connectivity
➢ Home server PC
➢ TN vs. IPS
➢ Fluorescent vs. LED backlighting

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- ➢ Display cable types
- ➢ Device cables and connectors
- ➢ Adapters and convertors

- ➢ Install and configure common peripheral devices.
- ➢ Install SOHO multifunction device/printers and configure appropriate settings.
- ➢ Configuration settings
- ➢ Device sharing
- ➢ Public/shared devices
- ➢ Data privacy
- ➢ User authentication on the device
- ➢ Hard drive caching

Networking

- ➢ Identify the various types of network cables and connectors.
- ➢ Fiber Connectors: SC, ST and LC
- ➢ Twisted Pair Connectors: RJ-11, RJ-45
- ➢ Wiring standards: T568A, T568B
- ➢ Coaxial Connectors: BNC, F-connector

- ➢ Characteristics of connectors and cabling
- ➢ Fiber Types (single-mode vs. multi-mode)
- ➢ Speed and transmission limitations
- ➢ Twisted pair Types: STP, UTP, CAT3, CAT5, CAT5e, CAT6, CAT6e, CAT7, plenum, PVC
- ➢ Coaxial Types: RG-6, RG-59

- ➢ Properties and characteristics of TCP/IP.
- ➢ Common TCP and UDP ports, protocols and their purpose.
- ➢ Protocols
- ➢ TCP vs. UDP

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➢ WiFi networking standards and encryption types.
➢ Configuration of SOHO wireless/ wired router
➢ Internet connection types, network types and their features.
➢ Network architecture devices, their functions and features.
➢ Networking tools
➢ Install and configure laptop hardware and components.
➢ Hardware/device replacement
➢ SSD vs. hybrid vs. magnetic disk
➢ Characteristics of various types of other mobile devices.
➢ Accessories and ports of other mobile devices.

Hardware and Network Troubleshooting

➢ Troubleshoot common problems related to motherboards, RAM, CPU and power with appropriate tools.
➢ Troubleshoot hard drives and RAID arrays with appropriate tools.
➢ Troubleshoot common video, projector and display issues.
➢ Troubleshoot wired and wireless networks with appropriate tools.
➢ Troubleshoot and repair common mobile device issues while adhering to the appropriate procedures.
➢ Troubleshoot printers with appropriate tools.