

Course Content Form

PIMA COMMUNITY COLLEGE

Classification: Workforce Response

Effective Term: 201009

ITF 180 CompTIA A+ Practical Application (2009)

Initiator: Heather Tilson, Greg Wilson **Credit Hours:** 1.25

Campus: Community

Lecture Periods: 2.5

Date: 8/24/2009

Lab Periods:

Description:

This is the second of two courses in the CompTIA A+ certification program. Building upon the skills learned in the A+ Essentials course, the student will perform more advanced tasks in installing, configuring, upgrading, and maintaining personal computers in a business environment. More complex techniques are presented for troubleshooting PC, OS, and network connectivity issues and security implementation.

Performance Objectives:

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

1. Use hardware tools and techniques to diagnose and repair computer and printer problems
2. Use operating system tools to diagnose and repair system problems
3. Troubleshoot connectivity issues and configure a SOHO network
4. Configure application and system software to manage permissions and threats

Outline:

I. Hardware

- a. Installing, configuring, maintaining, and troubleshooting components
 - i. Storage devices
 - ii. Motherboards
 - iii. Power Supplies
 - iv. Processors
 - v. Memory cards
 - vi. Adapter cards
 - vii. Cooling Systems
- b. Using hardware tools
 - i. Multimeter
 - ii. Power supply tester
 - iii. Specialty hardware / tools
 - iv. Cable testers
 - v. Loop back plugs
 - vi. Anti-static pad and wrist strap
 - vii. Extension magnet
- c. Detecting and resolving common printer issues
 - i. Printed image quality irregularities
 - ii. Fuser, drum, and paper feed problems

II. Microsoft Operating Systems

- a. Using command-line utilities
 - i. DIR, CHKDSK, EDIT
 - ii. COPY, XCOPY
 - iii. FORMAT
 - iv. MSCONFIG, IPCONFIG, PING
 - v. MD / CD / RD
 - vi. NET, TRACERT, NSLOOKUP
 - vii. DEFRAG, NTBACKUP
 - viii. CHKDSK

- b. Differentiating between Windows 2000, XP, and Vista directory structures
 - i. User and system file locations
 - ii. Fonts
 - iii. Program and temporary files
 - iv. Offline files and folders

- c. Using system utilities
 - i. Disk Manager
 - ii. System monitor
 - iii. Administrative tools
 - iv. Device Manager
 - v. Task Manager
 - vi. System Information
 - vii. System restore
 - viii. Remote Desktop Protocol (Remote Desktop / Remote Assistance)
 - ix. Task Scheduler
 - x. Regional settings and language settings

- d. Evaluating and resolving common issues
 - i. Operational Problems
 - ii. Error Messages and Conditions
 - iii. Startup
 - iv. Event viewer
 - v. System Performance and Optimization

III. Networking

- a. Troubleshooting client-side connectivity issues using appropriate tools
 - i. TCP/IP settings
 - ii. Characteristics of TCP/IP
 - iii. Mail protocol settings
 - iv. FTP settings
 - v. Proxy settings
 - vi. Tools (use and interpret results)
 - vii. Secure connection protocols
 - viii. Firewall settings

- b. Installing and configuring a small office/home office (SOHO) network
 - i. Dial-up
 - ii. Broadband
 - iii. Wireless
 - iv. Routers / Access Points
 - v. LAN (10/100/1000BaseT)
 - vi. Bluetooth (1.0 vs. 2.0)
 - vii. Cellular
 - viii. Basic VoIP (consumer applications)
 - ix. Basics of hardware and software firewall configuration
 - x. Physical installation

IV. Security

- a. Preventing, troubleshooting and removing viruses and malware
 - i. Antivirus software
 - ii. Identifying malware symptoms
 - iii. Quarantine infected systems
 - iv. Malware types, symptoms and solutions
 - v. Remediating infected systems
 - vi. Updating antivirus software
 - vii. Scheduling scans
 - viii. Repairing boot blocks
 - ix. Scanning and removal techniques
 - x. Educating the end user

- b. Implementing security and troubleshooting common issues
 - i. Local users and groups: Administrator, Power Users, Guest, Users
 - ii. Vista User Account Control (UAC)
 - iii. NTFS vs. Share permissions
 - iv. Shared files and folders
 - v. Encryption (Bitlocker, EFS)
 - vi. User authentication
 - vii. BIOS security