COMPUTER TECHNICIAN A+ CERTIFICATION (UPGRADE) (120 Hours)

Course No.: 79-30-90

COMPETENCY CHECKLIST

Student Name _____

Teacher Name _____ School Site _____

Start Date _____ Completion Date _____ Certificate Date_____

Teacher Signature _____ Student Signature _____

(Signatures verify completion of course competencies)

A. ORIENTATION AND SAFETY (3 hrs)

_____ 1. Qualifications/prerequisites for trade
_____ 2. Working conditions and opportunities
_____ 3. CompTIA's Certification Exams
_____ 4. Emergency procedures
_____ 5. Classroom "shop" policies and procedures
_____ 6. Pass designated safety test

B. ADVANCED DOS 6.2x (5 hrs)

_____ 1. Explain AUTOEXEC.BAT file
_____ 2. Conventional and Reserved Memory
_____ 3. Extended/XMS Memory
_____ 4. Expanded/LIM/EMS Memory
_____ 5. High Memory/HMA & Upper Memory/UMB
_____ 6. DOS Device Drivers
_____ 7. CONFIG.SYS file
_____ 8. Relationship: AUTOEXEC.BAT & CONFIG.SYS
_____ 9. Commands inAUTOEXEC.BAT & CONFIG.SYS
____ 10. Demo use of F5 and F8 function keys
____ 11. Pass written Advanced DOS Exam

C. THE SYSTEMBOARD (4 hrs)

_____ 1. Universal Serial Bus
_____ 2. Firewire Bus
_____ 3. Bus Mastering
_____ 4. Importance of/methods to obtain info
_____ 5. AT and ATX boards
_____ 6. Microprocessor socket numbers
_____ 7. Pass written Motherboard & Buses Exam

D. MICROPROCESSORS (10 hrs)

_____ 1. Describe Intel 8086/8088 microprocessor
_____ 2. Describe Intel 80286 microprocessor
_____ 3. Describe Intel 80386 microprocessor
_____ 4. Describe Intel 80486 microprocessor
_____ 5. Describe Intel Pentium microprocessor
_____ 6. Describe Intel Pentium Pro microprocessor
_____ 7. Describe Intel Pentium MMX microprocessor
_____ 8. Describe Intel Pentium I microprocessor
_____ 9. Describe Intel Pentium II microprocessor
____ 10. New additions to Intel microprocessor family
____ 11. Describe AMD K6 microprocessors
____ 12. Describe AMD K6 2 microprocessors
____ 13. New additions to AMD microprocessor family
____ 14. IBM MI microprocessors
____ 15. IBM MII microprocessors
____ 16. New additions to IBM microprocessor family
____ 17. Describe competitor's microprocessors
____ 18. Define Word Size
____ 19. Define Data Path
____ 20. Describe Wait States
____ 21. Define internal and external cache
____ 22. Different levels of cache: L1, L2, and L3
____ 23. PCI to ISA bridge
____ 24. Pass Microprocessor Exam

E. HARD DRIVES (5 hrs)

_____ 1. Explain interleaving
_____ 2. Explain skewing
_____ 3. Define zone-bit recording
_____ 4. Describe Logical Block Addressing
_____ 5. Describe FAT16
_____ 6. Describe FAT32
_____ 7. Describe VFAT
_____ 8. Explain MBR and DBR
_____ 9. Explain seek time
____ 10. Explain rotational latency period
____ 11. Describe access time
____ 12. Describe SCSI technology
____ 13. Describe data recovery

____ 14. Pass written Hard Drives exam

F. PRINTERS (4 hrs)

_____ 1. Various types of printers available
_____ 2. Describe resolution
_____ 3. How an ink-jet printer works
_____ 4. Explain importance of using correct paper
_____ 5. How to clean an ink-jet printer
_____ 6. Identify parts of laser printer
_____ 7. 6 steps of electro-photographic process
_____ 8. How to clean a laser printer
_____ 9. Describe preventative maintenance
____ 10. Pass written Printers exam

G. SUPPORTING WINDOWS 3.1x (8 hrs)

_____ 1. Explain Standard Mode
_____ 2. Explain Enhanced Mode
_____ 3. Describe 386PART.PAR and SPART.PAR files
_____ 4. Describe WIN386.SWP file
_____ 5. Describe GDI.EXE file
_____ 6. Explain INI Files and their structure
_____ 7. Demo use of SYSEDIT
_____ 8. Explain swap files used for virtual memory
_____ 9. Problems w/swap files and disk compression
____ 10. How WIN.COM determines mode to run in
____ 11. Describe DOSX.EXE
____ 12. Describe KRNL286.EXE and KRNL386.EXE
____ 13. Describe WSWAP.EXE and DSWAP.EXE
____ 14. Describe WIN386.EXE
____ 15. Describe Object Linking and Embedding
____ 16. Describe Dynamic Data Exchange
____ 17. Define dynamic link library
____ 18. Pass written Windows 3.1x Exam

H. NETWORKING (10 hrs)

_____ 1. Define network
_____ 2. Describe server-to-server networks
_____ 3. Describe peer-to-peer networks
_____ 4. Define topology
_____ 5. Describe different types of cabling
_____ 6. Explain media access control schemes
_____ 7. Explain OSI Layer Network Model
_____ 8. Define protocol
_____ 9. Describe PPP
____ 10. Describe TCP/IP
____ 11. Describe NetBEUI
____ 12. Describe SMTP
____ 13. Describe HTTP
____ 14. Describe FTP
____ 15. Describe hubs and intelligent hubs
____ 16. Describe routers, bridges, and gateways
____ 17. Explain Dial-Up Networking
____ 18. Describe TAPI
____ 19. Demo sharing files/folders
____ 20. Describe IFSHLP.SYS files
____ 21. Describe ping command
____ 22. Pass written Networking Exam

I. MONITORS (3 hrs)

_____ 1. Define pixel
_____ 2. Define raster
_____ 3. Define bitmap
_____ 4. Define font
_____ 5. Define typeface
_____ 6. Define bitmapped font
_____ 7. Define vector/outline font
_____ 8. Difference between font and typeface
_____ 9. Describe scalable fonts
____ 10. Describe True Type fonts
____ 11. Define resolution in monitors
____ 12. Describe refresh rates
____ 13. Interlaced and non-interlaced monitors
____ 14. Describe dot pitch
____ 15. Explain green monitors
____ 16. Describe upgrading VRAM
____ 17. Resolutions of various video adapters
____ 18. Pass written Monitors and Fonts exam

J. MULTIMEDIA/PERIPHERALS (10 hrs)

_____ 1. Demo installation of FDD
_____ 2. Demo installation of CD-ROMs
_____ 3. Demo installation of sound cards
_____ 4. Describe resolution in sound cards
_____ 5. Demo installation of scanners
_____ 6. Demo installation of other peripherals

K. MODEMS (5 hrs)

_____ 1. Describe communications layers
_____ 2. Explain the UART chips
_____ 3. Define Modulate and Demodulate
_____ 4. Describe RS232c standard
_____ 5. Describe modem speeds
_____ 6. Describe handshaking
_____ 7. Demo installing a modem
_____ 8. Demo configuring a modem
_____ 9. Describe the Hayes AT Command Set
____ 10. Pass written exam and demo configuration

L. WINDOWS 9x (15 hrs)

_____ 1. Keystrokes to move in Windows w/o mouse
_____ 2. Right clicking and alternate kicking
_____ 3. Define shortcuts
_____ 4. Define applet

_____ 5. Demo use of folders
_____ 6. Demo use of long file names
_____ 7. Describe the desktop
_____ 8. Demo customizing the desktop
_____ 9. Demo how to manage files with Explorer
____ 10. Describe the Start button
____ 11. Describe the Taskbar
____ 12. Describe the Control Panel Applets
____ 13. Describe My Computer icon and its contents
____ 14. Demo use of The Print Manager
____ 15. Demo creating a dial-up connection
____ 16. Adding/removing components after install
____ 17. Demo how to exit Windows properly
____ 18. Pass written exam and demo skills

M. <u>SUPPORTING WINDOWS 9x</u> (5 hrs)

_____ 1. Describe minimum hardware requirements
_____ 2. Recommended hardware requirements
_____ 3. Optimal hardware requirements
_____ 4. Demo installation of Windows 95
_____ 5. Demo installation of Windows 98
_____ 6. Full versus upgrade versions of Windows
_____ 7. Demo installation for dual booting
_____ 8. Diskette vs. CD-ROM editions of Win 95
_____ 9. Differences in Windows A, B and C editions
____ 10. Describe CAB files
____ 11. Copying CABs to hard drive to run setup
____ 12. Describe custom installations
____ 13. Problems that may arise during installation
____ 14. Describe USER.EXE file
____ 15. Explain PIFs
____ 16. Explain property sheets
____ 17. Demo ability to support Windows 9x system

N. <u>THE INTERNET</u> (5 hrs)

_____ 1. Define internet
_____ 2. Define intranet
_____ 3. Describe the WWW or internet
_____ 4. Define browser
_____ 5. Define ISP
_____ 6. Define IP address
_____ 7. Define URL
_____ 8. Describe TCP/IP
_____ 9. Demo connecting internet using Win 3.1x
____ 10. Demo connecting internet using Win 9x
____ 11. Demo uploading drives from the internet
____ 12. Demo downloading docs from the internet
____ 13. Use of internet to keep up w/technology
____ 14. Internet as resource for reference material
____ 15. Pass written Internet Exam

O. <u>TROUBLESHOOTING SKILLS</u> (25 hrs)

_____ 1. Importance of backing up a system
_____ 2. How to approach problem logically
_____ 3. How to approach problem systematically
_____ 4. Importance of researching
_____ 5. Importance of taking to the user
_____ 6. How to talk to use to acquire information
_____ 7. Role-play listening/providing feedback
_____ 8. Copyright laws and piracy
_____ 9. Define intermittent problems
____ 10. Importance of problem isolation
____ 11. Various diagnostic software and their uses
____ 12. Demo use of diagnostic software
____ 13. Define steps of problem determination
____ 14. Define steps of problem verification
____ 15. Describe use of diagnostic hardware
____ 16. Alternate operating systems
____ 17. Demo ability to troubleshoot successfully

P. <u>EMPLOYABILITY SKILLS</u> (5 hrs)

_____ 1. Employment requirements
_____ 2. Apply learned skills when seeking job
_____ 3. Design sample résumés
_____ 4. Describe job specifics for various positions
_____ 5. Describe qualification needed for job
_____ 6. Plans for seeking employment
_____ 7. Identify potential employers
_____ 8. Accurate/legible/complete job application
_____ 9. Complete sample job application
____ 10. Importance of punctuality in interview
____ 11. Positive attitude in job interview
____ 12. Enthusiasm in job interview
____ 13. Appropriate appearance in interview
____ 14. Cleanliness/neatness in interview
____ 15. Importance of punctuality on job
____ 16. Positive attitude on job
____ 17. Enthusiasm for job
____ 18. Appropriate appearance on job
____ 19. Importance of cleanliness/neatness on job
____ 20. Continuous upgrading of job skills
____ 21. Proper personal appearance and demeanor
____ 22. Customer service to build relationships