

Zarem/Golde ORT Technical Institute
HT302 - A+ Certification Training Operating Systems Exam

I. General Information

- a. Instructor: Kevin M. Drew, Email: kdrew@steptechnical.com
- b. Course Description: This course is the second module in a series of courses that prepares students for entry-level positions as technicians in the fields of personal computer and peripheral maintenance and support. While emphasizing the practical skills needed to practice successfully as technicians, the course also prepares students to pass the internationally recognized A+ Operating Systems Exam (220-302).

This course covers MS DOS, LINUX, and Windows (NT4.0 Workstation and Server 9x, 2000 Professional and Servers, XP Home and Professional)

- c. Required Text: A+ Certification All-In-One Exam Guide, Publisher: McGraw-Hill Osborne Media, 5th edition (October 31, 2003) ISBN: 0072229918
- d. Credits Awarded: 5 credit hours are awarded upon passing.
- e. Classes meet Monday – Friday, 8:30am - 3:30pm, lunch from 11:30am to 12:30pm.

II. Performance Objectives

Most course objectives map directly to certification objectives outlined by CompTIA for the A+ Operating Systems exam. In addition to certification-oriented objectives, lessons have been added, especially in networking to enhance the background and quality of performance for entry-level technicians.

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

- a. Identify major PC operating systems including core components, file systems, features, and versions, including DOS, LINUX, Windows 9X, Windows NT, Windows 2000, Windows XP, and Windows 2003 Server.
- b. Install, configure, and upgrade each operating system. Demonstrate knowledge of dual and multi-boot system configurations.
- c. Manage disks, directories, and files in each operating system and under various maintenance and security scenarios.
- d. Plan and deploy technologies to ensure fault tolerance and disaster recovery. Install and configure network attached storage and backup schemes.
- e. Manage PC software issues using system utilities.
- f. Identify and troubleshoot each step of boot sequence for each system.
- g. Identify security issues and solutions including viruses, worms, hackers, firewalls, proxy servers, security software, and standard procedures.
- h. Troubleshoot software problems by selecting the appropriate steps in diagnosing the problem and finding a solution using information provided by users, visual cues, diagnostic tools, and utilities.
- i. Identify the networking capabilities of each operating system.
- j. Design, implement, and troubleshoot a TCP/IP solution.
- k. Provide remote access solutions in Windows 2000 and XP.
- l. Plan, install, and configure a wireless network.

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III. Course Outline

This course consists of 40 lessons. Two lessons will be completed per day, five days per week. Each lesson contains three 50-minute periods including a lecture, lab, and computer based quiz.

Week 1			
#	Lesson Topic	Lesson Objective	Assignment
1	Overview of Operating Systems	Identify the major desktop components, interfaces, and functions. Objective a	
2	MS DOS I	Demonstrate knowledge of DOS architecture and key system files. Partition and format hard disk. Install operating system and configure DOS device drivers. Objective b, f	All-In-One A+ Text Pages 515 - 535
3	MS DOS II	Navigate a complex implementation of a DOS file system. Manipulate and manage files and directories. Objective b, c, f, h, i	
4	LINUX I	Demonstrate knowledge of LINUX architecture and key system files. Partition and format hard disk. Install operating system and configure LINUX device drivers. Objective b, f	All-In-One A+ Text Pages 535 - 577
5	LINUX II	Navigate a complex implementation of a LINUX file system. Manage files and directories. Objective b, c, f, h, i	
6	Windows 9X I	Demonstrate knowledge of Windows 98x architecture and key system files. Install, configure, and troubleshoot installation. Create boot and emergency disks. Upgrade from Windows 98SE to Windows ME. Objective b, f	All-In-One A+ Text Pages 578 - 600
7	Windows 9X II	Identify the names, locations, and purposes, of Win9x system files. Identify concepts and procedures for creating, viewing, and managing disks, and files. Objective b, c, d	
8	Windows 9X III	Identify Win9x utilities, their purpose, location, and available switches. Install and configure device drivers, and required software. Objective e, f	All-In-One A+ Text Pages 602 - 636
9	Windows 9X IV	Recognize and interpret the meaning of common error codes and startup messages from the boot sequence, and identify steps to correct the problems. Objective f, h	
10	Windows Network Software I	Identify the networking capabilities of each Windows operating environment. Objective i	All-In-One A+ Text Pages 637 - 689

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Week 2			
#	Lesson Topic	Lesson Objective	Assignment
11	Windows Network Software II	Demonstrate understanding of the Windows network interface. Objective i	All-In-One A+ Text Pages 725 - 747
12	Windows NT 4.0	Demonstrate knowledge of Windows NT architecture and key system files. Install, configure, and troubleshoot installation. Create boot and emergency disks. Identify the names, locations, purposes, and contents of major system files. Identify basic concepts and procedures for creating, viewing, and managing disks, directories and files. Objective b, c, f, i	
13	Windows 2000 Professional I	Demonstrate knowledge of Windows 2000 Professional architecture and key system files. Install, configure, and troubleshoot installation. Create boot and emergency disks. Identify steps to perform an operating system upgrade from Windows 9x to Windows 2000. Objective b, c	All-In-One A+ Text Pages 748 - 777
14	Windows 2000 Professional II	Identify the names, locations, purposes, and contents of Windows 2000 files. Identify basic concepts and procedures for creating, viewing, and managing disks, directories, and files. Objective c, d, f	
15	Windows 2000 Professional III	Identify Windows 2000 Professional system utilities, their purpose, location, and available switches. Identify procedures for installing/adding a device, including loading, adding, and configuring device drivers, and required software. Objective d, e	All-In-One A+ Text Pages 778 - 799
16	Windows 2000 Professional IV	Recognize and interpret the meaning of common error codes and startup messages from the boot sequence, and identify steps to correct the problems. Troubleshoot system problems. Objective e, f, h	
17	Windows 2000 Server I	Install, configure, and troubleshoot installation of Windows 2000 Advanced Server. Create boot and emergency disks. Demonstrate knowledge of Windows 2000 services and utilities. Identify Windows 2000 security architectures. Objective b, c, g	All-In-One A+ Text Pages 801 - 818
18	Windows 2000 Server II	Identify the names, locations, purposes, and contents of major system files. Identify basic concepts and procedures for creating, viewing, and managing disks, directories and files. Objective c, d, f	
19	Windows 2000 Server III	Plan and implement a security policy. Manage users using standard system utilities. Objective g	All-In-One A+ Text Pages 819 - 829
20	Windows 2000 Server IV	Recognize and interpret the meaning of common error codes and startup messages from the boot sequence, and identify steps to correct the problems. Troubleshoot system problems. Objective f, h	

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Week 3			
#	Lesson Topic	Lesson Objective	Assignment
21	Windows XP I	Demonstrate knowledge of Windows XP architecture and key system files. Install, configure, and troubleshoot installation. Create boot and emergency disks. Identify steps to perform an operating system upgrade from Windows 9x to Windows XP. Objective b, c	All-In-One A+ Text Pages 830 - 839
22	Windows XP II	Identify the names, locations, purposes, and contents of XP system files. Identify basic concepts and procedures for creating, viewing, and managing disks, directories and files. Objective c, d, f	
23	Windows XP III	Identify Windows XP system utilities, their purpose, location, and available switches. Identify procedures for installing/adding a device, including loading, adding, and configuring device drivers, and required software. Recognize and interpret the meaning of common error codes and startup messages from the boot sequence, and identify steps to correct the problems. Troubleshoot system problems. Objective d, e, h	All-In-One A+ Text Pages 840 - 847
24	OSI Model - Physical Layer	Identify physical layer protocols and equipment. Objective j	
25	Data Link Layer	Identify data link layer protocols, equipment, and drivers. Objective j	All-In-One A+ Text Pages 1169 - 1170
26	TCP/IP Suite		
27	TCP/IP - Application Layer	Identify TCP/IP applications and the "well known ports" associated with them. Objective j	All-In-One A+ Text Pages 1171 - 1180
28	TCP/IP - Transport Layer	Identify characteristics of TCP and UDP. Demonstrated understanding of connectionless and connection-oriented protocols and related applications. Objective j	
29	TCP/IP Network Layer - I	Demonstrate understanding of TCP/IP network layer protocol. Objective j	All-In-One A+ Text Pages 1181 - 1193
30	TCP/IP Network Layer - II	Identify names and features of routing protocols used on the Internet. Objective j	

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Week 4			
#	Lesson Topic	Lesson Objective	Assignment
31	TCP/IP Utilities	Use TCP/IP applications to manage network services. Objective j	All-In-One A+ Text Pages 1194 - 1205
32	TCP/IP Addressing	Plan and implement an enterprise-level TCP/IP solution. Objective j	
33	Remote Network Access	Configure a connection with a remote network using the appropriate software and/ or hardware technology. Identify and detail sources of externally provided data services. Objective g, k	All-In-One A+ Text Pages 1205 - 1209
34	Wireless Networks I	Install and configure a wireless network. Objective j	All-In-One A+ Text Pages 1210 - 1218
35	Wireless Networks II	Troubleshoot typical wireless network connection problems by isolating hardware from software issues and testing solutions. Objective g, l	
36	Viruses and Security I	Identify security strategies to protect against viruses, worms, hackers, and other threats to data and equipment. Use various strategies to detect problems and offer corrective measures. Objective g, l	
37	Viruses and Security II	Plan and implement a network security policy. Objective g	Review Notes
38	Operating System and Network Troubleshooting I	Troubleshoot common software computer and network problems and develop a method for isolating problems and testing solutions. Objective j, h, g	Review Notes
39	Operating System and Network Troubleshooting II	Troubleshoot common software computer and network problems and develop a method for isolating problems and testing solutions. Objective j, h, g	Review Notes
40	Operating System and Network Troubleshooting III	Troubleshoot common software computer and network problems and develop a method for isolating problems and testing solutions. Objective j, h, g	

IV. Course Information

- a. Course requirements: Credit in HT301, (*A+ Core Hardware Exam*) or demonstrated equivalent knowledge.
- b. Types of exams and evaluation weight:
 1. Quizzes 20%
 2. Module level exams 50%
 3. Final exam 20%
 4. Participation 10%
- c. Attendance policy: (See the Zarem/Golde ORT Technical Institute: Course Catalog for the complete policy.) The institute expects students to demonstrate those work habits that are required in the work place. Students should attend classes on time and should not be absent for any sessions.

Students are required to attend a minimum of 70% of scheduled class sessions during their program.

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- d. Participation: Students are expected to participate in lectures and labs by taking notes, asking and answering questions, and completing assignments. Students are expected to review assigned material before class.
- e. Teaching methods: Each lesson module will be conducted in three phases of equal size: lecture, instructor assisted laboratory, and computer based drilling/examination.

V. Evaluation

Each hour of lecture and lab is followed by an hour of computer-based quizzes. Progress is recorded and monitored by instructors in order to ensure progress. Criteria for grading are as follows:

Grade	Score	Explanation	Grade Points
A	90-100	Excellent	4.0
B	80-89	Good	3.0
C	70-79	Average	2.0
D	60-69	Below Average	1.0
F	Below 60	Failure	0.0
W	Withdrawal		
I	Incomplete		
P	Passing		

A letter "P" or "F" is given for courses taken on a Pass/Fail basis. See catalog for Pass/Fail policy.