NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
ITN 106 – MICROCOMPUTER OPERATING SYSTEMS (3 CR.)

Course Description

Teaches use of operating system utilities and multiple-level directory structures, creation of batch files, and configuration of microcomputer environments. May include a study of graphical user interfaces. Lecture 3 hours per week.

General Course Purpose

This course provides a comprehensive foundation in understanding PC desktop operating systems. Students will learn how install, configure, troubleshoot, update and uninstall various operating systems and its components. These skills are expected from any PC desktop, helpdesk and network support technician. The covered material of this course is related to the industry certification CompTIA A+.

Course Prerequisites/Corequisites

College level reading and writing ability

Course Objectives

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

a) Identify various Operating Systems currently on the market for PCs
b) Install Operating Systems in various configurations
c) Identify and install/replace OS components
d) Select the appropriate installation type and components
e) Identify conflicts and suggest resolutions for OS components and applications
f) Install, upgrade, replace, and remove various drivers
g) Select and install applications
h) Install and configure basic networking
i) Setup preventive maintenance procedures
j) Identify and correct computer software problems

Major Topics to be Included

a) Operating Systems, Drivers, Applications, Networking, AntiVirus Programs, Troubleshooting
b) OS components
c) Application compatibility
d) Driver compatibility
e) Role of BIOS/CMOS alongside drivers
f) Diagnosing software problems and suggesting solutions
g) OS updates, patches, and service packs
h) Overview of networking with emphasis on TCP/IP
i) System backup and restoration
j) Data protection
k) Automating system tasks using various Operating System components and applications
l) Securing an OS
m) Preventing and responding to virus threats

Student Learning Outcomes

Operating Systems, Drivers, Applications, Networking, Antivirus Programs, Troubleshooting
1. Identify Operating Systems on the market
2. Define drivers, their use, and configuration options
3. Define applications, their categories, installation and configuration requirements
4. Define basic networking terminology
5. Define viruses and virus prevention
6. Identify OS and application problems and recommend solutions

OS components
1. Define core components of an OS
2. Understand the graphical shells on the market
3. Identify command-line shells on the market
4. Add and remove OS components

Application compatibility
1. Understand application compatibility issues depending on the application and the designated OS, application version, and OS version
2. Work with legacy applications

Driver compatibility
1. Pick proper driver based on the OS type and version as well as the device type and version
2. Upgrade and downgrade drivers
3. Disable drivers
4. Remove drivers
5. Configure drivers

Role of BIOS/CMOS alongside drivers
1. Understand CMOS and BIOS
2. Upgrade the BIOS
3. Troubleshoot the BIOS
4. Configure the CMOS and the BIOS

Diagnosing software problems and suggesting solutions
1. Locate application problems and suggest solutions
2. Troubleshoot legacy applications
3. Troubleshoot application compatibility issues

OS updates, patches, and service packs
1. Understand updates, patches, and service packs
2. Learn when and how to update an OS or an application

Overview of networking with emphasis on TCP/IP
1. Identify and configure basic networking with today's OS
2. Be comfortable with basic networking terminology

System backup and restoration
1. Backup data
2. Restore data
3. Backup an OS
4. Restore and OS

Data protection
1. Securing data against tampering and theft

Automating system tasks using various Operating System components and applications
1. Learn to use automation tools to speed up day to day jobs and reduce errors
2. Identify built-in and third party automation tools for various OS and applications

Securing an OS
1. Identify security level of various OS on the market
2. Understand basic OS security

Preventing and responding to virus threats
1. Identify virus categories
2. Identify antivirus software on the market
3. Identify proper application of antivirus software

Required Time Allocation per Topic

In order to standardize the core topics of ITN 106 so that a course taught at one campus is equivalent to the same course taught at another campus, the following student contact hours per topic are required. Each syllabus should be created to adhere as closely as possible to these allocations. Of course, the topics cannot be followed sequentially. Many topics are taught best as an integrated whole, often revisiting the topic several times, each time at a higher level. There are normally 45 student-contact-hours per semester for a three credit course. (This includes 15 weeks of instruction and does not include the final exam week so 15* 3 = 45 hours. Sections of the course that are given in alternative formats from the standard 16 week section still meet for the same number of contact hours.) The final exam time is not included in the time table. The category, Other Optional Content, leaves ample time for an instructor to tailor the course to special needs or resources.

Topic	Time in Hours	Percentages
Operating Systems, Drivers, Applications, Networking, Antivirus Programs, Troubleshooting	4	9%
OS components	2	4%
Application compatibility	3	7%
Driver compatibility	2	4%
Role of BIOS/CMOS alongside drivers	2	4%
Diagnosing software problems and suggesting solutions	4	9%
OS updates, patches, and service packs	3	7%
Overview of networking with emphasis on TCP/IP	3	7%
System backup and restoration	3	7%
Data protection	3	7%
Automating system tasks using various Operating System components and applications	3	7%
Securing an OS	3	7%
Preventing and responding to virus threats	3	7%
Other Optional Content	3	7%
Testing to include quizzes, tests, and exams (not including final exam)	4	9%
Total	**45**	**100%**