Instructor Syllabus

I. COURSE DESCRIPTION

Organization of a typical Personal Computer (PC) at the hardware level is examined in a given popular operating systems environment. Terminology and concepts related to major PC hardware components and their functions will be discussed. Entry-level hands-on skills as well as theoretical knowledge in handling PC hardware will be covered.

II. MAJOR TOPICS

1. The Personal Computer and its Components
2. The Motherboard and its Components
3. Operating Systems
4. The Graphical User Interface (GUI) Desktop
5. Configuring and using the Operating System
6. Installing, uninstalling, upgrading and configuring PC components
7. Computer Security
8. Introduction to Networking

III. COURSE OBJECTIVES

1. Demonstrate proper safety procedures when working inside a personal computer.
2. Identify the major components of the personal computer including the power supply, hard disk drive, floppy disk drive, CD-ROM drive, memory, CPU, motherboard, expansion sockets, and video adapter.
3. Identify and select the proper connectors, sockets and cables used for interconnecting common personal computer components.
4. Demonstrate the proper technique for installing and/or uninstalling common personal computer components.
5. Use a typical operating system to find, open, view, create, rename, delete, save, backup, compress, encrypt, share, or run appropriate files or folders.
6. Customize a typical operating system for your own preferences and convenience.
7. Demonstrate the proper use of common computer utilities, tools, drivers, managers, services, and protocols.
8. Maintain, defragment, format, configure, partition, and share a hard drive.
9. Identify proper security precautions when using personal computers including the proper use of passwords, permissions, sharing, and anti-virus and anti-hacking techniques.
10. Given the proper components, construct and configure a simple peer-to-peer network.

IV. STUDENT TEXT and SUPPLIES

Introduction to Personal Computers, Heathkit Educational Systems, 2006.

V. EVALUATION

CATEGORY	PERCENT
Unit Quizzes	40%
Outside Assignments	10%
Labs	30%
Final	20%
Total	100%

VI. REFERENCES and RESOURCES

The instructor should select necessary resources from the following:

Mark Minasi, *The Complete PC Upgrade & Maintenance Guide*, Sybex
Scott Mueller, *Upgrading and Repairing PCs*, Que
Cowart/Knittel, *Special Edition Using Windows 2000 Professional*, Que
Cowart/Knittel, *Special Edition Using Windows XP Professional*, Que
Paul McFedries, *Windows 98 Unleashed Pro Reference Edition*, Sams
Michael Meyers, *All in One A+ Certification Exam Guide*, McGraw Hill

Resources for the textbook and lab exercises, such as courseware files and other documents and links, are located at www.heathkit.com/ITT

VII. TEACHING ENVIRONMENT

Each unit is divided into theory and lab sessions. The lab session must be conducted in a computer lab with adequate number of computers purposed for this course. The theory session should be conducted in the theory classroom with adequate equipment for instructional-aids, such as the whiteboard, computer image projector, etc. The theory session can also be conducted in the lab environment as long as the instructional aid capability is available.

The lab computers for this course are generic Intel-based personal computers with relatively up-to-date hardware and software (the Operating System) configurations. As the purpose of the labs is to provide a hands-on platform to enhance students' learning in the generic personal computer structure and organization, emphasis should not be placed to seek the most current specifications for both hardware and software.

VIII. INTENT/ INTERFACE

Although some contents in this course are identical to that of the popular A+ certification, this course is NOT for the preparation of any industry/professional certification test.

Contents in this course serve as prerequisite for some subsequent courses in some specific programs.

IX. INSTRUCTOR NOTES

Student should be made aware that personal computers come in different product lines. This course does not teach the Apple family architecture, nor does this course deal with laptops of any kind. The reason to choose Intel based product line (often referred to as "IBM compatible") as a standard model is because of the market share and popularity in actual use.

Course Schedule

UNIT	THEORY TOPIC(s)	LABS [or PROJECTS]
1	General Knowledge, CPUs, and Safety	1-1 and 1-2
2	Motherboards and Memory	2-1 and 2-2
3	Starting with Windows	3-1 and 3-2
4	Working with the Windows Desktop	4-1 and 4-2
5	Windows History and Data Management	5-1 and 5-2
6	Windows User Accounts and Networking	6-1 and 6-2
7	Troubleshooting and Supporting Your Own Computer	7-1 and 7-2
8	Hard Drive Technologies	8-1 and 8-2
9	Buses, Video, and Upgrades	9-1 and 9-2
10	Networks	10-1, 10-2, and 10-3
	Final Exam	