

Course Summary and Instructor Expectations

Base Fee:

To be paid in the main office and includes all materials you may use during the class that have to be replaced annually.

- Materials may include Cable, Connectors and any other “disposable” media and materials

Note: Your base fee does not cover the following:

- I suggest you purchase at least a 2GB Jump or Flash Drive
- Head phones

Grades:

Grades for this class are based on the following areas:

- Daily Effort, Attendance/Tardiness, behavior, altitude, and cooperation with other students in a team atmosphere on projects
- Quality of all Assignments
- Meeting Assignment Deadlines
- Chapter Questions and minilabs
- Projects/Presentations and Handouts
- Keeping a Notebook

Note: Track your own grades.

Attendance:

- Attendance and tardiness are recorded daily. **The school tardy policies are strictly enforced.** Refer to your Student Handbook
- Students must have proper written and dated pass from instructor to enter or leave the classroom.
- Be here. Student’s participation in class is part of grade.
- Students are expected to be in the classroom and seated when the bell rings.
- In the event of an absence, the student is responsible for finding what work they missed.
- If an assignment is due day of the absence, the assignment is due the day and period the student returns to class.
- Assignments given during an absence, the assignment is given the amount of days of the excused absence added to the deadline.
- Projects and Presentations are made up within two days of return to class.

Classroom Rules: Consequences can include detentions, calls home, referral to Dean, and even removal from class.

- Conduct yourself in a mature manner and responsible manner at all times.
- Respect and cooperate with the instructor and classmates.
- **Profanity or derogatory slang will not be tolerated!**
- Theft of property or student work **WILL NOT** be tolerated.
- Demoralizing words, gestures, or behavior towards the instructor or students **WILL NOT** be tolerated.
- **Do not use computers without instructor’s permission.**
- “Suffering the Web” is not permitted unless related to a class project and permission is given.
- Be on time and seated when the bell rings.
- Raise your hand if you need help in open lab setting or if you have a question in class time.
- No talking during evaluations.
- No food or beverages around computers.
- **All Assignments and Projects must be Edited and/or Completed during class.**
- No cheating. Instructor decides what cheating is.

Technology Education Department Rules:

- No Video or pictures of inappropriate material is allowed to be processed, worked on, or even brought in the school labs or school grounds.
 - Inappropriate material includes any picture or video of drugs, alcohol, violence, and suggestive sexual material. The instructor, dean, and administrators reserve the right to decide what appropriate or inappropriate material is.
- No video or pictures shall be taken of or worked on of fellow students that are demeaning or degrading in any way. The instructor, dean, and administrators reserve the right to decide what could be demeaning or degrading or harmful to other students.
- Remember, all work (video or pictures) are school property and subject to search at any times. If demeaned inappropriate or in violation of school policy appropriate disciplinary action will be taken.
- Do not urn in classroom/lab or studio. No horseplay.
- Do not use school equipment, materials, or supplies without asking instructor.
- The computers are only available to students during their assigned class time. The computers are not available before or after school. The instructor must be present for students to work on the computers.
- Respect other students and school’s property.
- Report all accidents, hazards, or broken equipment to the instructor at once.

Course Summary and Instructor Expectations

- Students are not to be in the studio at the beginning of class until attendance is taken and permission is granted
- Unexcused absences or tardiness are not tolerated, and are referred to the dean for disciplinary action. Refer to the student handbook.
- **NO** students are allowed to come down to work on projects from lunch, study hall, before, or after school.

Note: Failure to comply with these rules will result in discipline according to class rules and student handbook or removal from class or privileges including use of equipment or food/drink in class.

Equipment Sign-Out Forms:

- Students who borrow school equipment must have written permission slip from a parent or guardian before equipment can be used.
- Equipment must be properly checked out by the student. Failure to do this correctly may result in a loss of equipment privileges.
- Students are financially responsible for any damage to school equipment while operating it.
- Students are financially responsible for lost or stolen cameras.
- The school or the instructor reserves the right to limit the student's access to certain pieces of equipment or areas.

Course Summary and Instructor Expectations

Week By Week Outline (Subject to Change)

Week One

- Syllabus
- Intro to class and overview of materials
- [Introduction: Architecture and Concepts](#)
 - Complete Tutorial

Week Two

[Preventive Maintenance](#)

Lesson 1: Introduction

- Defining Preventive Maintenance
- Importance of Preventive Maintenance
- Preventive Maintenance Products and Procedures
- Preventive Maintenance Products
 - Liquid Cleaning
 - Vacuum Cleaners
 - UPS and Suppressors
- Preventive Maintenance Procedures
- Disk Defragmenter

Lesson 2: Implementing preventive measures on PC Components

- Preventive Measures on Components
 - Mouse
 - Keyboard
 - Drives
 - ◆ CD/DVD Drives
 - ◆ Hard Disk Drive
 - Monitor
 - Printer

Lesson 3: Mechanizing Preventive Maintenance

- Automated Preventive Maintenance
- Error Checking in File System
- Error Checking in Hard Disks
- Virus Scanning in Files and Hard Disks
- Defragmenting Hard Disk Volumes
- Need for Creating PM Schedule
- Preventive Maintenance Schedule

Lesson 4: Implementing Safety Measures

- ESD Precautions and Procedures
- ESD Protection Devices
- ESD Precautions

- Situations that could Present a Danger or Hazard

- Potential Hazards
- Safety Procedures

Lesson 5: Protecting the Environment

- Environmental Friendly Disposal Procedures
- Disposal Procedures
- Disposal of Computer Equipment
- Materials Safety Data Sheet (MSDS)

Summary

- Complete Tutorial

Week Three

[Desktop Teardown \(Removing & Installing Components\) - I](#)

Lesson 1: Introduction

- Introduction

Lesson 2: Caution and Guidelines

- Caution and Guidelines

Lesson 3: System Case

- System Case

Lesson 4: Memory

- Removing the Memory
- Installing the Memory

Lesson 5: Expansion Cards

- PCI Cards Installation
- PCI Cards Removal
- Removing a AGP Card
- Installing an AGP Card

Lesson 6: Storage Devices

- Storage Devices
- Removing the Hard Drive
- Installing the hard drive
- Removing the Floppy Drive
- Installing the Floppy Drive
- Removing a CD/DVD drive
- Installing a CD/DVD drive

Lesson 7: Processor

- Removing the processor Air Flow Shroud
- Installing the Processor Air Flow Shroud

Course Summary and Instructor Expectations

- Removing the Processor
- Installing the Processor

Lesson 8: Motherboard

- Removing the Motherboard
- Replacing the Motherboard

Lesson 9: Power Supply

- Removing the Power Supply
- Installing the Power Supply

Lesson 10: Summary

- Summary

Week Four

Portable Computer Teardown (Removing & Installing Components) - II

Lesson 1: Introduction

- Introduction
- Procedure and Guidelines
- Portable Exploded view

Lesson 2: Battery

- Removing a Battery
- Reserve Battery

Lesson 3: Memory Module

- Removing Memory Module
- Installing Memory Module

Lesson 4: Cards

- Removing a PCI Card
- Installing a PCI Card
- Removing Blue Tooth Card
- Removing Modem

Lesson 5: Drives

- PCI Removing Optical Drive
- Removing a Hard Drive

Lesson 6: Keyboard

- Removing a Keyboard

Lesson 7: Display Assembly and Latch

- Display Assembly
- Display Panel
- Display Latch

Lesson 8: Palm Rest

- Removing the Palm Rest

Lesson 9: Processors and Fans

- Removing Fan
- Removing Microprocessor Thermal-Cooling Assembly
- Installing the Microprocessor Thermal-Cooling Assembly

- Removing the Processor Module

Lesson 10: Speakers

- Removing Speakers

Lesson 11: System Boards

- Removing System Board

Lesson 12: Summary

- Summary

Week Five

Device Configuration and Port Settings

Lesson 1: Introduction

- Introduction

Lesson 2: I/O Ports

- I/O Ports
- Serial Port
- Parallel Port
- USB Port
- IEEE 1394
- Infrared Port

Lesson 3: Cable Types

- Serial Cable
- USB Cable

Lesson 4: Serial Connectors

- DB-9
- DB-25
- RJ-11
- RJ-45

Lesson 5: Parallel Connector DB-25

- Parallel Connector DB-25

Lesson 6: PS/2 Mini Din

- PS/2 Mini Din

Lesson 7: USB

- USB

Lesson 8: IEEE 1394

- IEEE 1394

Lesson 9: Configuring Internal Devices

- Configuring Internal Modem
- Floppy Drive Controller
- Hard Drive Controller
- Configuring Multimedia Devices
- Configuring Infrared Devices

Lesson 10: Summary

Summary

Week Six

Installing IDE & SCSI Devices

Course Summary and Instructor Expectations

Lesson 1: Introduction

- Introduction

Lesson 2: IDE Interfaces

- IDE Interfaces
- EIDE
- ATA/ATAPI
- Serial ATA (SATA)

Lesson 3: Configuring IDE device

- Configuring IDE device
- Master/Slave/Cable Select
- Device Per Channel
- Cable Orientation and Requirement

Lesson 4: SCSI Interface

- SCSI Interface
- Narrow
- Fast
- Wide
- Ultra-wide
- LVD
- HVD
- Internal and external connectors

Lesson 5: SCSI ID

- SCSI ID
- Jumper Block/DIP switch settings
- Resolving ID Conflicts

Lesson 6: RAID

- RAID
- Hardware RAID
- Software Raid
- RAID 0: Data Stripping
- RAID 1: Mirroring
- RAID 0 (Stripping)
- RAID 1 (Mirroring)
- RAID 3
- RAID 5
- RAID 10

Lesson 7: Cabling

- Cabling
- Length
- Types
- Termination Requirements

Lesson 8: Summary

- Summary

Week Seven

Upgrading A PC

Lesson 1: Introduction

- Introduction

Lesson 2: Motherboard

- Motherboard

Lesson 3: Memory

- Memory

Lesson 4: Hard Drives

- Hard Drives

Lesson 5: CPU

- CPU

Lesson 6: BIOS

- BIOS

Lesson 7: Adapter Cards

- Adapter Cards

Lesson 8: Laptop power sources

- Laptop Power sources

Lesson 9: PCMCIA (Type I, II, III cards)

- PCMCIA (Type I, II, III cards)

Lesson 10: Summary

- Summary

Week Eight

Diagnosing & Troubleshooting

Lesson 1: Introduction

- Introduction

Lesson 2: I/O ports and Cables

- I/O ports and Cables
- Serial
- Parallel
- USB
- Infra Red
- IEEE-1394 Adapters and Ports
- SCSI

Lesson 3: Motherboard

- Motherboard
- CMOS/BIOS Settings
- POST audible/visual error codes

Lesson 4: Processor /CPU

- Processor /CPU

Lesson 5: Storage Devices and Cables

- FDD
- HDD
- CD/CDRW
- DVD/DVDRW

Course Summary and Instructor Expectations

- Tape Drive
- Removable Storage
- Lesson 6: Memory
 - Memory
- Lesson 7: Display Device
 - Monitor
- Lesson 8: Input Device
 - Keyboard
 - Mouse
- Lesson 9: Adapter Cards
 - Sound Card
 - Video Card
 - NIC
 - Modem
- Lesson 10: Portable Systems
 - Portable Systems
 - PCMCIA
 - Batteries
 - Docking Stations/Port Replicators
- Lesson 11: Summary
 - Summary

Week Nine

[Motherboard/Processor/Memory](#)

- Lesson 1: Introduction
- Introduction
- Lesson 2: Processor
 - Processor
 - Processor Components
 - Popular CPU chips
 - Different types of CPU Chips:
(only Pentium Class Chips)
 - Pentium
 - Pentium Overdrive
 - Pentium Pro
 - Pentium II
 - Pentium II (Klamath)
 - Pentium II (Deschutes)
 - Pentium III
 - Pentium III Cores
 - Pentium 4
 - Pentium 4 Willamette
 - Pentium 4 Northwood
 - Pentium 4 Extreme Edition
 - Pentium 4 Prescott

- Pentium D
- Pentium M
- Pentium M Cores
- Dual Core
 - ◆ Voltage
 - ◆ Speed
 - ◆ Cache Levels
 - ◆ Sockets / Slots
 - ◆ VRM's

Lesson 3: RAM Types

- Introduction
- Types of ROM
- RAM Types
 - EDO
 - DRAM
 - SRAM
 - VRAM
 - SDRAM
 - DDR RAM

Lesson 4: Form Factors

- Introduction
- SIMM
- DIMM
- SODIMM
- MicroDIMM
- RIMM

Lesson 5: Memory Chips

- Memory Chips
- Parity Vs Non-Parity Chips
- ECC Vs Non ECC Chips
- Single Sided Vs Double Sided Chips

Lesson 6: Types of MotherBoard

- Introduction
- AT Motherboard
- ATX Motherboard

Lesson 7: COM Ports in Motherboard

- Communication Ports in Motherboard

Lesson 8: Memory Slots

- Memory Slots on Motherboard

Lesson 9: Other Components

- Processor Sockets
- Sockets Supporting Intel CPU's
- External Cache Memory
- Bus Architecture
- Expansion Slots
- ISA Expansion Slots

Course Summary and Instructor Expectations

- PCI Expansion Slots
- AGP
- USB
- USB Hubs
- Chipset

Lesson 10: Compatibility Guidelines

- Compatibility Guidelines

Lesson 11: Summary

Summary

Week Ten

Understanding & Configuring CMOS (Complementary Metal Oxide Semiconductor)

Lesson 1: Introduction

- Introduction

Lesson 2: Settings

- Default Settings
- CPU Settings

Lesson 3: Ports

- Printer Parallel Port
- COM/Serial Port

Lesson 4: Drives

- Floppy Drive
- Hard Drive

Lesson 5: Memory

- Memory

Lesson 6: Boot Sequence

- Boot Sequence

Lesson 7: Date/Time

- Date/Time

Lesson 8: Passwords

- Passwords

Lesson 9: Plug and Play BIOS

- Plug and Play BIOS

Lesson 10: Power Management

- Power Management

Lesson 11: Disabling on-board Devices

- Disabling on-board devices
- Disabling Virus Protection

Lesson 12: Infrared

- Infrared

Lesson 13: Summary

- Summary

Week Eleven

Printers

Lesson 1: Introduction

- Introduction

Lesson 2: Print Technologies

- Print Technologies | Solid Ink | Dot Matrix | Ink Dispersion | Laser

Lesson 3: Printer Interfaces

- Printer Interfaces
- Serial
- Parallel
- USB
- Network

Lesson 4: Printer Problems

- Printer Drivers
- Paper Feed and Output
- Calibration
- Errors
- Print Quality
- Connections

Lesson 5: Summary

- Summary

Week Twelve

Networking Concepts

Lesson 1: Introduction

- Introduction

Lesson 2: Cable Types

- Cable Types
- Co-axial
- Plenum/PVC
- Twisted Pairs
- STP
- UTP (Cat 3, Cat 5/e, Cat 6)
- Fiber (Single, Multi-mode)
- RS-232

Lesson 3: Connector Types

- BNC
- RJ-45
- AUI
- ST/SC
- IDC/UDC

Lesson 4: Addressing

- Addressing

Lesson 5: Bandwidth

- Bandwidth

Lesson 6: Network Protocols

- Network Protocols

Course Summary and Instructor Expectations

- TCP/IP
- IPX/SPX (NWLINK)
- NetBEUI

Lesson 7: Network Topologies

- Network Topologies

Lesson 8: Networking Models

- Networking Models
- Peer-to-peer
- Client-Server

Lesson 9: Network Technologies

- Network Technologies
- LAN
- MAN
- WAN
- DSL
- ISDN
- Cable
- Wireless
- Satellite

Lesson 10: Summary

- Summary

Week Thirteen

Microsoft Windows OS

Lesson 1: Introduction

- Introduction

Lesson 2: Windows OS's: A Contrast

- Windows
- Windows 95
- Windows 98
- Windows Me
- Windows NT 4.0 Workstation
- Windows 2000 Professional
- Windows XP
- Windows Vista

Lesson 3: OS Components

- Registry
- Virtual Memory
- File system

Lesson 4: OS Interfaces

- Windows Explorer
- My computer
- Control Panel
- Computer Management Console
- Accessories/System Tools
- Command Line
- Network Neighborhood/My network Places
- Task Bar / Systray
- Start Menu

- Device Manager

Lesson 5: Summary

- Summary

Week Fourteen

System Files & Disk Partitions

Lesson 1: Introduction

- Introduction

Lesson 2: Windows-9x System Files

- Windows-9x System Files
- IO.SYS
- MSDOS.SYS
- AUTOEXEC.BAT
- COMMAND.COM
- CONFIG.SYS
- HIMEM.SYS
- EMM386.SYS
- WIN.COM
- SYSTEM.INI
- WIN.INI
- SYSTEM.DAT
- Registry Data Files

Lesson 3: Windows-NT

- Windows NT-based Specific Files
- BOOT.INI
- NTLDR
- NTDETECT.COM
- NTBOOTDD.SYS
- NTUSER.DAT
- Registry data files

Lesson 4: Disk Partitions

- Disk Partitions
- Primary Partition
- Active Partition
- Extended Partition
- Logical Drive

Lesson 5: Files Systems

- File System
 - FAT16
 - FAT32
 - NTFS 4
 - NTFS 5

Lesson 6: Directory Structures

- Directory Structures
- Create Folders
- Navigate the Directory Structure
- Maximum Depth

Lesson 7: Files

- Files
- File System

Course Summary and Instructor Expectations

- File Naming Conventions
- File Attributes - Read only, Hidden, System and Archive
- File Compression
- File Encryption
- File Permission
- File Types

Lesson 8: Summary

- Summary

Week Fifteen

Command Line & OS Utilities

Lesson 1: Introduction

- Introduction

Lesson 2: Command Line Functions

- Command Line Functions
- ATTRIB
- Command/CMD
- COPY
- DEFRAG
- Delete/Rename
- DELTREE
- DIR
- ECHO
- EDIT
- MD/CD/RD
- MEM
- PING
- SET
- SETVER
- TYPE
- VER
- XCOPY

Lesson 3: Disk Management Tools

- Backup/Restore Utility (MSbackup, NTBackup, etc)
- CHKDSK
- DEFRAG.EXE
- Disk Cleanup
- FDISK.EXE
- Format
- ScanDisk

Lesson 4: System Management Tools

- Computer Manager
- Device manager
- Event Viewer
- MSCONFIG.EXE
- REGEDIT.EXE (View information/Backup registry)

- REGEDT32.EXE
- SCANREG
- SYSEDIT.EXE
- System Monitor
- Task Manager

Lesson 5: File Management Tools

- Edit.com
- EXTRACT.EXE
- Windows Explorer

Lesson 6: Summary

- Summary

Week Sixteen

Installing Windows

Lesson 1: Introduction

- Introduction

Lesson 2: Hardware Compatibility and Minimum Requirements

- Hardware compatibility and minimum requirements

Lesson 3: Disk Preparation

- Disk Preparation
- Partition
- Format Drive

Lesson 4: Installation Method

- Installation Method
 - Bootable CD

Lesson 5: Setup Utility

- Installing Operating System
- Installing Windows 98
- Installing Windows 2000 Professional
- Windows XP
- Windows Vista

Lesson 6: Installation Options

- Installation Options
- Installation type (Typical/Custom)
- Network Configuration
- File System
- Dual Boot Support

Lesson 7: Device Driver Configuration

- Device Driver Configuration

Lesson 8: Operating System Upgrade

- Operating System Upgrade
- Upgrade paths
- Upgrading Windows to Higher versions of Windows
- Determine correct startup Utility (WINNT 32 Vs WINNT)
- Application Compatibility
- Apply service packs, patches and updates

Lesson 9: Boot Sequence

Course Summary and Instructor Expectations

- Boot Sequence Boot steps for windows 9x system
 - Boot Steps for Windows NT/2000/XP/Vista
- Lesson 10: Alternative Boot Methods
- Using a Startup disk
 - Safe mode/VGA mode
 - Last Known Good configuration
 - Command Prompt mode
 - Booting to a system restore point
 - Recovery console
- Lesson 11: Creating Emergency Repair Disk (ERD)
- Creating emergency repair disk (ERD)
- Lesson 12: Summary
- Summary

Week Seventeen

Installing Device Drivers

- Lesson 1: Introduction
- Introduction
- Lesson 2: Additional Information
- Additional Information
- Lesson 3: Device Driver
- Plug and Play(PNP) and Non-Plug and Play
 - Install and Configure Device Drivers
 - Manually install a device Driver
 - Search The Internet for updated Drivers
 - Using Unsigned Drivers (driver signing)
- Lesson 4: Additional Windows Components
- Additional Windows Components
- Lesson 5: Summary
- Summary

Error Codes And Diagnostics Utilities

- Lesson 1: Introduction
- Introduction
- Lesson 2: Boot Failure and Errors
- Boot Failure and Errors
 - Invalid Boot disk
 - Inaccessible boot device
 - Missing NTLDR
 - Bad or missing command interpreter
- Lesson 3: Startup Error Messages
- Startup Error Messages
 - Error in Config.sys line xxx
 - Himem.sys not loaded
 - Missing or corrupt Himem.sys
 - Device/service has failed to start
 - A device in SYSTEM.INI, WIN.INI, Registry is not found

- Event Viewer - Event Log is full
 - Failure to Start GUI
 - Windows Protection Error
 - Few other common errors
 - Registry Corruption
 - Registry Corruption
- Lesson 4: Startup disk
- Startup disk
 - Required files for a boot disk
 - Boot Disk with CD-ROM support
- Lesson 5: Startup Modes
- Startup Modes
 - Safe Mode with Command Prompt
 - Safe Mode with Networking
 - Step-by-Step/Single Step Mode
 - Automatic Skip /Driver (ASD.exe)
 - Running Automatic Skip Driver Agent
 - Few other Startup options
- Lesson 6: Diagnostic Tools and Utilities
- Diagnostic Tools and Utilities
 - Installation Manuals/ User Manual
 - Internet Resources
 - Task Manager
 - Dr. Watson
 - Boot Disk
 - Event Viewer
 - Device Manager
 - WinMSD
 - Recovery CD
- Lesson 7: Eliciting problem symptoms from user
- Eliciting problem symptoms from user
- Lesson 8: Having the user reproduce the error
- Having the user reproduce the error
- Lesson 9: Identify the recent changes made by the user
- Identify the recent changes made by the user
- Lesson 10: Summary
- Summary

Week Eighteen

Network Capabilities & Internet Protocols

- Lesson 1: Introduction
- Introduction
- Lesson 2: TCP/IP
- TCP/IP
 - Gateway
 - Subnet Mask
 - DNS
 - WINS
 - DHCP
 - APIPA

Course Summary and Instructor Expectations

Lesson 3: IPX/SPX (NWLINK)

- IPX/SPX (NWLINK)

Lesson 4: Apple Talk

- Apple Talk

Lesson 5: NetBEUI/NetBIOS

- NetBEUI/NetBIOS

Lesson 6: Network Tools

- IPCONFIG.EXE
- Winipcfg.exe
- PING
- TRACERT.EXE
- NSLOOKUP.EXE

Lesson 7: Share Resources

- Share Resources

Lesson 8: Permit to Shared Resources

- Setting Permissions to Shared Resources

Lesson 9: Network Types

- Network Types
- Network Card

Lesson 10: IP's and Terminologies

- TCP/IP
- e-mail (POP, SMTP, IMAP)
- HTML
- HTTP
- SSL
- Telnet
- FTP

Lesson 11: Connectivity

- Dial-up Network
- DSL Networking
- ISDN Networking
- Cable
- Satellite
- Wireless (WAN)
- LAN

Lesson 12: Summary