

MASTER SYLLABUS

COURSE NO. AND TITLE: EST 310, Information Technology, Integration and Support

COURSE DESCRIPTION: This course uses a lab/lecture approach designed to give students background information and “hands-on” experience with personal computers, network systems, and related technologies. An introductory presentation includes information on proprietary and open operating systems, basic networking and PC hardware components, peripheral devices, digital video and audio technologies, and local area network concepts and configurations. Students will disassemble and reassemble PCs, add and remove hardware devices, configure settings and drivers, and become familiar with basic troubleshooting practices. Emerging related and advanced technologies will also be explored.

PREREQUISITE: Restricted to Information Technology minors with Computer Science 200 a, b, or Information Management Systems 229, or consent of the department

PREREQUISITE TO: None

COURSE OBJECTIVES:

Upon successful completion of this course, the student will have the knowledge, skills, and competencies required to:

1. Understand the function of the basic components of personal computers.
2. Understand the procedures for repairing, reconfiguring, and adding new components to personal computers through hands-on experience.
3. Become familiar with the processes of troubleshooting hardware and software problems.
4. Understand digital video and audio, and capture and compile files to media.
5. Install and configure operating systems including Windows and Linux.
6. Understand the basic concepts of computer networking and network protocols.
7. Build a small local area network, configure a simple firewall, and connect it to the Internet.
8. Understand the basic aspects of network security.
9. Find on-line assistance and information.
10. Become familiar with new technological advancements in the field.

TEXTBOOK: None

TOPICAL OUTLINE:

Topics	Percentage
I. Understanding how personal computers work	15
a. The boot process	
b. Hardware communication	
c. Loading an operating system	
d. Peripheral Devices	
e. Running applications	
II. Disassembling, repairing, and adding components to a PC	15
a. Tearing-down a PC	
b. Making repair notes and diagrams	
c. Adding expansion cards	
d. Installing drivers	
III. Troubleshooting hardware and peripheral devices	5
a. Troubleshooting concepts	
b. Beep errors and hardware problems	
c. Windows error messages	
IV. Understanding digital video and audio	10
a. How CD-ROMs work	
b. Writing to CD-R media	
c. Sampling audio and video	
d. Re-sampling and file conversion	
e. Digital media and file compression	
V. Installing and configuring operating systems	15
a. Installing Windows 2000	
b. Configuring Windows 2000 services	
c. Installing Linux	
d. Configuring Linux services	
VI. Computer networking and network protocols	10
a. Network concepts	
b. How computers talk on a network	
c. TCP/IP and network protocols	
VII. Building a small local area network	10
a. Network interface cards	
b. Network cabling	
c. Hubs, switches, and routers	
VIII. Basic network security	10
a. Viruses	
b. Network Attackers	
c. Firewalls	
d. Policies and best practices	
IX. Becoming familiar with online resources and assistance	5
X. Following new technological advancements.	5