

Community College of Allegheny County CREDIT COURSE SYLLABUS

COURSE NUMBER: CIT115

COURSE TITLE: Introduction to Information Technology

CREDITS: 3

HOURS:	Lecture:	3	Lab:	0		
	Clinical:	0	Studio:	0	Practicum:	0

PREREQUISITES: Basic skills using a personal computer and operating system.

COREQUISITES:

CATALOG COURSE DESCRIPTION:

This course explores technical issues involved with computers and information technology. Topics include computer hardware and components, operating systems, file storage, networking fundamentals, digital media, database systems, and the Internet structure & organization. Students research various information technology issues using the Internet and in-class or simulated lab exercises in a personal computer environment.

LEARNING OUTCOMES:

Upon successful completion of the course, the student will:

1. Identify major motherboard components, characteristics of CPUs, and various types of memory.
2. Describe the types of expansion slots and adapter cards, the role of buses in a computer's processing speed, and the differences among various input/output ports.
3. Explain the characteristics of various input devices (pointing devices, digital cameras, scanners, biometric devices) and output devices (monitors, printers, speakers).
4. Explain the characteristics of various storage devices (magnetic disks, optical disks, removable media, solid state).
5. Describe the functions of an operating system, how they control a network, how they administer security, various utilities, and the features of desktop and server operating systems.
6. Describe the structure of the Internet, how to access and connect to the Internet, the components of a URL and IP address, types of e-commerce, and how various services work.
7. Describe various network communications standards, communication media, communication devices, and network architectures (client/server, peer-to-peer).
8. Describe the advantages of a database approach and their various characteristics (relational, object-oriented, multi-dimensional).
9. Identify the uses of various programming languages and development tools.
10. Discuss the computer hardware needs and solutions for an enterprise, the importance of computer backup, and steps involved with a disaster recovery plan.
11. Describe types of malware, techniques to prevent unauthorized access, methods of encryption, and risks & safeguards associated with wireless communications.

LISTED TOPICS:

1. Categories of computers (personal, mobile, servers, mainframes, supercomputers, embedded) and examples of computer usage (SOHO, mobile, power user, enterprise)
2. Internet concepts (addresses, access providers, browsers, searching for information) and Internet services (Web, email, newsgroups, VoIP, FTP, chat rooms)
3. System Unit components and characteristics (motherboard, CPU, data representation, memory, adapter cards, ports, buses, bays, power supply)
4. Input devices and characteristics (keyboard, pointing devices, voice input, digital cameras, scanners, game controllers)
5. Output devices and characteristics (displays, printers, audio)
6. Storage devices and characteristics (magnetic disks, optical disks, static-state, removable)
7. Operating Systems characteristics (boot process, resource management and sharing, utility programs) and types (stand-alone, network, embedded)
8. Network design (LANs and WANs, architectures, topologies) and Communications characteristics (standards, devices, media)
9. Database characteristics (data hierarchy, types of databases, administration)
10. Computer Security (Internet and network attacks, theft, failures, backups, privacy) and health concerns
11. Programming languages (low level, procedural, object-oriented, Web page development) and characteristics (development cycle, documentation, control structures)
12. Enterprise computing technologies (RAID, SANs, blade servers, thin clients, high-availability)

REFERENCE, RESOURCE, OR LEARNING MATERIAL TO BE USED BY STUDENT:

The course will use a current and appropriate textbook, current and appropriate software, and the use of a computer lab connected to the Internet for hands-on exercises.

Approved by the President on: Dr. Alex Johnson 11/03/09

Start Year/Term: _____