SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: ~~ENGT (###)~~ INTD-100

Department: School of Engineering Technologies

Course Title: Essentials for Engineering Technologies

Semester: Fall Year: 2011

Objectives/Competencies

Course Objective	Competencies
1. Identify and describe basic computer hardware and software components, functions, and relationships.	*1.1* Define the word computer and name the four basic operations that a computer performs. *1.2* Demonstrate the use of computer hardware, software and peripherals. *1.3* Describe two main components of a computer system: hardware and software *1.4* Provide examples of hardware devices that handle input, processing, output, and storage tasks. *1.5* Discuss the major categories and the various types of computers for personal educational and engineering applications *1.6* Recognize the ethical and societal impacts of computer use *1.7* Discuss how computers affect employment. *1.8* List ways to be a responsible computer user *1.9* Understand how computers represent data *1.10* List the components inside a system unit and explain their use. *1.11* Discuss (in general terms) how a CPU processes data *1.12* List the types of memory found in a computer and explain the purpose of each *1.13* Describe the various physical connectors and explain their use.\ *1.14* List and explain various types of Input, Output and Storage devices *1.15* Distinguish between memory and storage *1.16* List major components of system software and interfaces *1.17* List five basic functions and three major categories of operating systems

Course Objective	Competencies
2. Identify and demonstrate the use of general purpose Application Software for productivity, learning, and engineering technologies.	2.1 Understand the connection and differences between system software and application software 2.2 List the most popular types of general purpose software applications 2.3 Explain the concept of software versions and upgrades 2.4 Explain the key features and uses for word processing, 2.5 Demonstrate the use a commercial, open source and cloud based word processor to create, edit, save, print word documents. 2.6 Describe the major features of spreadsheet software 2.7 Demonstrate the use a commercial, open source and cloud based spreadsheet to create, edit, save, share and manipulate a spreadsheet 2.8 Explain and demonstrate how to install and uninstall software, from CDs or the Web download 2.9 Describe the rights granted by copyright law, a typical commercial software license, a shareware license, a freeware license, an open source license, and public domain software. 2.10 Create valid names for files and folders, plus demonstrate that you can construct and trace file paths 2.11 Describe how a computer physically stores data on disks, but represents this storage system with a logical model
3. Describe and discuss the Internet and World Wide Web as a global communications phenomenon.	3.1 Define the Internet and explain how it works 3.2 Briefly recount the history of the Internet 3.3 Describe several ways of finding information on the web including the use of an URL, surfing, conducting a search, sharing with other users with RSS feeds, blogs, wikis and podcasts. 3.4 List the most popular Internet Services/Apps and what they do 3.5 Draw a conceptual diagram illustrating the Internet backbone, NAPs, NSPs, Explain why cookies are useful in an environment that is based on a stateless protocol. 3.6 List and use the rules of "Netiquette" 3.7 List the equipment and software that can be used to work with various types of digital media 3.8 List the applications that could be used in engineering technologies curriculum (Individualize to align with potential major) 3.9 Examine Cloud Computing and identify cloud technology applications appropriate for personal productivity and engineering technologies curriculum. 3.10 Discuss various wired and wireless communication

Course Objective	Competencies
4. Understand the history, current applications, careers, social issues and future trends in engineering technologies created by the digital revolution.	4.1 Describe the hardware, software, and operating system characteristics for computer prototypes and the generations of computers 4.2 Describe the role of the computer in today's global economy 4.3 Distinguish between the various Engineering curricula and careers. 4.4 Describe the job outlook, working conditions, salaries, and the knowledge/skills/attitudes and experience necessary for success in engineering technologies professions 4.5 Conduct research on a current application, future trend or social issue associated with engineering technologies and present using technology 4.6 Analyze and discuss issues such as computer recycling, the digital divide, and computer literacy.
5. Demonstrate the use of a variety of instructional, application technologies and emerging technology applications.	5.1 Create an account and use a Learning Management System(Blackboard) 5.2 Access and use student accounts and management system (**webadvisor**) 5.3 Demonstrate hands-on labs associated with concepts. 5.4 Learn a new application using online help and tutorials to demonstrate "Learning to Learn".