

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY ITE 119 – INFORMATION LITERACY (3 CR.)

Course Description

Presents the information literacy core competencies focusing on the use of information technology skills. Skills and knowledge will be developed in database searching, computer applications, information security and privacy, and intellectual property issues. Lecture 3 hours per week.

General Course Purpose

This course provides a foundation in information literacy concepts in hardware, software, networking, computer security, programming, database, e-commerce, decision support systems and other emerging technologies, operating system functions and computer applications. The course will ensure that students achieve an essential understanding of information technology infrastructure encompassing devices and systems; protect their digital data and devices; learn to how to use the network resources and the Web; learn the use of the latest technologies; and become a knowledgeable information technology consumer and user.

Course Prerequisites/Corequisites

Prerequisite: Placement into ENG 111/ENF 3.

Course Objectives

Upon completing the course, the student will be able to:

- a) Identify computer hardware and software and discuss the four main functions of computer hardware: input, processing, output, and storage.
- b) Describe the major operating system functions and demonstrate usage of operating system services to include: disk management, file management, and memory management
- c) Identify different networks, network topologies, protocols, media types and network hardware
- d) Know how to use search techniques, evaluate information found on the Web and in electronic library databases and cite electronic and printed references.
- e) Identify and discuss computer security issues and computer viruses
- f) Identify and discuss computer ethics and the impact of IT on society
- g) Create a Web site with HTML tags and post to a Web server
- h) Create blogs and wikis

- i) Identify, discuss and use important categories of application software: word processing, spreadsheet, database management, and presentation graphics
- j) Identify, discuss and use software development processes and programming languages
- k) Identify and discuss emerging technologies artificial intelligence, machine learning, e-commerce, impact of cloud computing, data analytics

Major Topics to be Included

- a) Computer Hardware and Software
- b) Operating Systems
- c) Communication Technologies
- d) Web Information
- e) Computer Viruses
- f) Ethical Issues and IT Impact on Society
- g) Web Authoring and Publishing
- h) Blogs and wikis
- i) Productivity Tools
- j) System Analysis and Programming
- k) Emerging Technologies

Student Learning Outcomes

Computer Hardware and Software

Input/Output

- a) Define the term hardware
- b) Describe the different monitor and resolution types
- c) Describe the use of the keyboard and other input devices
- d) Describe various pointing devices (mouse, joystick, touchpad, stylus, or other)
- e) Discuss different print technologies
- f) Discuss the function of hardware ports (relevant legacy ports such as serial, parallel, firewire) popular and latest ports being used on various platforms for video, audio, and general data (such as USB, Thunderbolt, and HDMI)
- g) Define CPU operations

Processing

- a) Define the term CPU
- b) Discuss the function of the motherboard
- c) Discuss the processing speed/system clock
- d) Discuss the function of the bus

Storage

- a) Differentiate between the different types of storage (primary and secondary)
- b) Describe types of storage (dynamic and persistent)
- c) Define cloud storage and discuss its advantages and disadvantages
- d) Describe the data storage hierarchy (Bits, Bytes, Kilobytes, Megabytes, Gigabytes, and Terabytes)

Software

- a) Distinguish between system and application software

- b) Describe how software and hardware work together to perform computing tasks and how software is developed and updated.

Operating Systems

- a) Define the term operating system and discuss major operating system functions.
- b) Compare and contrast commonly used operating systems:
 - Windows
 - Unix/Linux
 - Apple
- c) Distinguish between system software and application software.
- d) Distinguish between a command-based system and graphical user interface.
- e) Discuss popular file types (MS Office, images, PDF, text files) and their association with software programs
- f) Identify and describe the parts and use of a window in a GUI.
- g) Distinguish between active window and background items.
- h) Demonstrate desktop management skills:
 - Use themes, screen savers, backgrounds
 - Use Tiling, cascading
 - Use Short-cuts and icons
 - Use Task bar, Quick Launch, Desktop menus
- i) Demonstrate file management skills:
 - Create and recognize valid file names and folders
 - Use find, copy, move, rename, delete files and folders
 - Explain the deletion process and recovery methods
- j) Demonstrate how to navigate and select using GUI tools
 - Use the operating system Help system to find answers to questions about operations and command usage

Communication Technologies

- a) Identify different networks, network topologies, protocols, media types and network hardware
- b) Define client/server and other architectures
- c) List and describe different networks - LAN, WAN, intranet, internet
- d) List and describe different network topologies - ring, bus, star
- e) List and describe different network protocols TCP/IP, SMTP, POP & IMAP, HTTP & HTTPS, DNS
- f) List and describe different network media types - wire pair, coaxial cable, fiber optics, microwave, radio frequency, infra-red
- g) List and describe different network hardware - router, hub, gateway
- h) Explain the operations of Web servers and browsers and compare various browsers
- i) Define the following terms and use the capabilities within the Internet - World Wide Web, Uniform Resource Locator, domain names, file transfer, common protocols, ISPs, and Web Hosting

Web Information

- a) Construct a search strategy using appropriate commands for the information retrieval system selected exclusion
 - inclusion
 - wildcards

- phrase
 - Boolean
- b) Explain how to evaluate information found online and in library databases for reliability, validity, accuracy, authority, timeliness, and point of view or bias
 - chat rooms
 - newsgroups
 - RSS
 - podcast sites
 - Wikipedia
 - blogs
 - c) Discuss social media sites and their advantages and disadvantages
 - d) Cite electronic and printed references
 - Use APA or MLA style to cite references
 - e) Discuss how Web 2.0 technologies such as blogs, wikis, RSS feeds, and podcasting can be used to communicate and collaborate

Computer Viruses

- a) Distinguish among a computer virus, biometric devices, encryption techniques, digital signature, email filtering, firewall, worm, trojan horse, denial of service attack, back door and spoofing, and identify ways to safeguard against these attacks.
- b) Discuss and explain the concepts of:
- c) Hacking and Cracking
- d) Authorization and Authentication
- e) Attacks, Spam, Phishing, Malware, social engineering
- f) Discuss the vulnerabilities introduced by technologies, such as wireless networks, social media sites and cloud storage
- g) Discuss how to take precautions when using the Web

Ethical Issues and IT impact on Society

- a) Discuss and explain copyright, software licenses, intellectual property rights, piracy, and information theft
- b) Discuss and explain electronic communication, plagiarism and issues associated with using the Web for research
- c) Discuss and explain codes of conduct and privacy issues associated with computing
- d) Discuss social, legal, and ethical issues including privacy, health concerns, green computing, and accessibility
- e) Discuss the relationship between rights and responsibilities associated with computing and the role of the Bill of Rights in protecting personal rights
- f) Discuss laws enacted with regards to SPAM, children's protection on Web and electronic theft

Web Authoring and Publishing

- a) Create a Web page using the following HTML tags:
 - basic tags (head, body, title)
 - insert an image

- create a link
 - table tags
 - ordered and unordered list
 - simple inline and embedded styles using Cascading Style Sheets) CSS
- b) Publish a Web page on the Internet

Blogs and wikis

- a) Discuss the use of blogs and wikis
- b) Create a simple blog
- c) Create a simple wiki

Productivity Tools

Word Processing

- a) Perform basic editing, text formatting, move, copy, and cut and paste functions
- b) Create page numbers, footnotes, headers and footers
- c) Use document style features such as font styles, sizes, colors, margins, alignment, and indentation
- d) Use document context manipulation functions, such as find, search and replace, spell checker, and a grammar check

Spreadsheets

- a) Use basic, built-in spreadsheet functions
- b) Distinguish between and use relative and absolute addressing with formulas
- c) Use essential formatting features, including data type, color, alignment, shading, and font characteristics
- d) Perform basic data representation using graphs, charts and pivot tables
- e) Merge multiple worksheets
- f) Generate data from the worksheet

Database

- a) Create and add data to a database
- b) Create and use simple queries for searching and manipulating data
- c) Create simple reports and forms

Presentation Graphics

- a) Describe use of presentations, including discussion on appropriate data display techniques
- b) Create and manipulate simple slide shows with outlines and notes
- c) Create slide presentations that include design layouts, templates, text, graphics, animation, and transitions

System Analysis and Programming

- a) Define and discuss each step in the software development life cycle.
- b) Define and discuss the steps to the program development cycle.
- c) Create a simple program that includes dictionaries, an if statement, a loop, a calculation and a link to a method.

Emerging Technologies

- a) Artificial Intelligence
- b) E-commerce
- c) Machine learning
- d) Impact of cloud computing on society
- e) Data analytics

Required Time Allocation per Topic

In order to standardize the core topics of ITE 119 so that a course taught at one campus is equivalent to the same course taught at another campus, the following student contact hours per topic are required. Each syllabus should be created to adhere as closely as possible to these allocations. Of course, the topics cannot be followed sequentially. Many topics are taught best as an integrated whole, often revisiting the topic several times, each time at a higher level. There are normally 45 student-contact-hours per semester for a three credit course. (This includes 15 weeks of instruction and does not include the final exam week so $15 \times 3 = 45$ hours. Sections of the course that are given in alternative formats from the standard 16 week section still meet for the same number of contact hours.) The final exam time is not included in the time table. The category. Other optional content, leaves ample time for an instructor to tailor the course to special needs or resources.

Topic	Time in Hours	Percentages
Computer Hardware and Software	3	7%
Operating Systems	3	7%
Communication Technologies	3	7%
Web Information	3	7%
Computer Viruses	3	7%
Ethical Issues and IT Impact on Society	6	13%
Web Authoring and Publishing	4	8%
Blogs and Wikis	2	4%
Productivity Tools	4	8%
System Analysis and Programming	3	7%
Emerging Technologies	3	7%
Student Presentations	3	7%
Tests and Quizzes (not including the Final Exam)	5	11%
Total	45	100%