

CSC 114 - Introduction to Computer Science - 3 Hrs. Official Course Syllabus

Course Description: This course is an introduction to information processing. Topics to be covered include computer history, input/output, processing, data storage, application and system software, and the impact of computers on society. Hands-on experience with DOS, word processing, spreadsheet, and database software, the Internet, and a graphical user environment.

I. RATIONALE:

Computers have become a part of all aspects of today's society and if students are to function in this society and become successful in their chosen profession, they need to have an understanding of how a computer works as well as how to use one in various applications. They also need to understand how to use the computer to communicate with others across the country and across the world.

II. PREREQUISITES: None

III. COURSE OBJECTIVES: Attached

IV. PREASSESSMENT: There is no preassessment in this course.

V. INSTRUCTIONAL PROCEDURES/TECHNIQUES:

Various instructional procedures are used including lecture, class discussions, hands-on experience with the computer, multimedia presentations, demonstrations, and videos.

VI. MATERIALS FOR LEARNING:

The materials used for this course include the text, student CD, laboratory manuals, at least one 3½" HD diskette, and access to a multimedia computer with Windows 95 operating system.

VII. INTERMEDIATE-POST ASSESSMENT:

There will be three or four intermediate examinations depending upon the course section. All sections will be giving credit for laboratory projects, reading assignments, and a standardized comprehensive final examination. Other assessment procedures may be used each instructor.

VIII. TEXT, READINGS, AND VISUAL AIDES:

The required materials for this course are:

Computers: Tools for an Information Age, H. L. Capron

Windows 95 Essentials, Sally Peterson and Laura Acklen

Microsoft Works 4.5 Essentials, Dwight Graham and Terri Dousias

There will be 5-8 required, graded reviews of articles related to the topics of computer science discussed in this course.

IX. ACADEMIC INTEGRITY

This statement on academic honesty in computer science courses is an addendum to the Mississippi College policy 2.19 found at www.mc.edu/publications/policies/219.html. In a computer science class individual effort is expected. Student misconduct not only includes cheating on tests, but also extends to copying or collaborating on programming assignments, projects, lab work or research unless otherwise specified by the instructor. Using other people's accounts to do your work or having others do your work is prohibited. Close proximity in lab does not mean collaboration is permitted. NOTE: Discussing logical solutions to problems is acceptable, exchange of code or procuring solutions from the Web or other sources is not acceptable.

First offense: grade of 0 for all parties involved unless the "guilty" party can be determined

Second offense: grade of F in the course

**** NOTE: the 36 days below define 1 MWF class. TR classes should cover 1½ MWF days for each class meeting. Night classes should cover 3 MWF days in one night.**

COURSE OBJECTIVES CSC 114 - Introduction to Computer Science

A. Appendix - History and Industry 2 days with class overview

The student will be able to

1. understand the story of how computer technology unfolded, with particular emphasis on the “generations”
2. understand how people and events affected the development of computers.
3. become familiar with the story of personal computer development.

B. Chapter 1 - Computer Hardware 1 day

The student will be able to

1. identify the basic components of a computer system: input, processing, output, and storage.
2. be able to list some common input, output, and storage media.
3. be able to distinguish data from information.
4. appreciate the significance of networking and data communications.
5. understand the significance of the Internet
6. become familiar with the various classifications of computers.

C. Chapter 2 - Computer Software 2 days

The student will be able to

1. understand the difference between operating systems and applications software.

2. appreciate the variety of available software.
3. be able to list various types of task-oriented software.
4. understand, in a general way, the kinds of software available for both large and small businesses.
5. know the functions of an operating system.
6. understand the basics of a personal computer operating system.
7. understand the need for resource allocation on large computers.
8. appreciate ethical issues associated with software.
9. learn the functions of various computer people.

D. Chapter 3 - The Central Processing Unit **1½ days**

The student will be able to

1. identify the components of the central processing unit and how they work together and interact with memory.
2. be able to describe how program instructions are executed by the computer.
3. understand how data is represented in the computer.
4. be able to describe how the computer finds instructions and data.
5. become acquainted with personal computer chips.
6. understand the measures of computer processing speed and approaches that increase speed.

E. Chapter 4 - Input and Output **1½ days**

The student will be able to

1. appreciate the user relationship with computer input and output.
2. understand how data is input to a computer system, and differentiate among various input equipment.
3. understand the benefits of the emerging technology of voice input.
4. be able to describe how a monitor works, and know the characteristics that determine quality.
5. list the different methods of computer output.
6. differentiate among different kinds of printers.
7. appreciate the large variety of input and output options available in the marketplace.

F. Chapter 5 - Storage and Multimedia **1½ days**

The student will be able to

1. list the benefits of secondary storage.
2. differentiate the principal types of secondary storage: magnetic disk, optical disk, and magnetic tape.
3. be able to describe how data is stored on a disk.
4. identify storage media available for personal computers.
5. understand how data is organized, accessed, and processed.

6. become acquainted with three methods of file organization: sequential, direct, and indexed sequential.
7. understand the difference between batch and transaction processing.

G. Chapter 6 - Networking

1½ days

The student will be able to

1. become acquainted with the evolution of data communications systems, from centralized processing to teleprocessing to distributed data processing to local area networks.
2. know the basic components of a data communications system.
3. know data transmission methods, including types of signals, modulation, and choices among transmission modes.
4. differentiate the various kinds of communication links, and appreciate the need for protocols.
5. understand network configurations.
6. know local area network components, types and protocols.
7. become acquainted with examples of networking.

H. Chapter 7 - The Internet

1½ days

The student will be able to

1. appreciate the history of the Internet.
2. learn what is needed to get on the Internet.
3. understand generally what an Internet service provider does.
4. know the rudimentary functions of a browser.
5. understand how to search the Internet.
6. appreciate the non-Web parts of the Internet.
7. appreciate the ongoing problems associated with the Internet.

(Chapters 8 and 9: see items J and K below)

I. Chapter 10 - Security and Privacy

1 day

The student will be able to

1. become aware of the problem of computer crime, including its changing nature, and the difficulties of discovery and prosecution.
2. become aware of the need for security, including disaster recovery plans, software and data security, and security legislation.
3. understand the importance of privacy and how it is affected by the computer age.
4. understand your own privacy vulnerability in the workplace and on the Internet.

J. Chapter 8 - The Internet in Business **1 day**

The student will be able to

1. understand the pervasiveness and inevitability of business on the Internet.
2. comprehend how money factors, especially advertising, affect the Web.
3. understand the likely success factors for Web entrepreneurs
4. appreciate the need for ever-greater Internet transmission speed.
5. differentiate intranets, extranets, and virtual private networks.

K. Chapter 9 - Writing Your Own Web Page **1 day**

The student will be able to

1. know, generally, the hardware and software required to write, test, and execute a web page.
2. know, generally, the format and uses of HTML tags.
3. appreciate the value of web page authoring software.

L. Chapter 11 - Word Processing and Desktop Publishing **1 day**

The student will be able to

1. appreciate the need for word processing.
2. explain why word processing is superior to using a typewriter.
3. list the basic features of word processing programs.
4. know the difference between moving and copying text.
5. describe spelling checkers and thesaurus programs.
6. understand the value of collaboration using word processing and the Web.
7. appreciate the advantages of desktop publishing.
8. identify desktop publishing terminology.

M. Chapter 12 - Spreadsheets and Business Graphics **1 day**

The student will be able to

1. appreciate the advantage of spreadsheets.
2. list several applications for spreadsheets.
3. understand the underlying principles of electronic spreadsheet use.
4. become acquainted with setting up and modifying a spreadsheet.
5. appreciate the advantages of business graphics
6. differentiate analytical and presentation graphics.

N. Chapter 13 - Database Management Systems **1 day**

The student will be able to

1. appreciate the advantages of databases.
2. understand how databases are organized.
3. become familiar with database terminology.

4. understand, generally, how to build and change a database.

O. Chapter 14 - Programming and Languages **1½ days**

The student will be able to

1. understand what programmers do and do not do.
2. learn how programmers define a problem, plan the solution, and then code, test, and document the program.
3. be able to list the levels of programming languages - machine, assembly, high-level, very high-level, and natural.
4. become acquainted with some major programming languages.
5. understand the concepts of object-oriented programming.

(Chapter 15: see item AB below; Chapter 16: omit)

P. Chapter 17 - The Cutting Edge **1½ days**

The student will be able to

1. understand the underlying concepts and terms of artificial intelligence.
2. become acquainted with the fundamentals of expert systems, robotics, and virtual reality.
3. understand how these fields of study have developed.
4. understand the impact of these fields on business and every day life.

Q. Windows 95 **3 days**

The student will be able to

1. start Windows
2. locate and identify the various components of the Windows desktop.
3. manipulate objects with a mouse.
4. use windows and controls.
5. use Windows Help
6. shut down and log off Windows.
7. maneuver through the Start menu.
8. use the start button and start menu to launch application programs.
9. use documents.
10. run more than one program at a time.
11. switch between windows using the Taskbar.
12. use My Computer to browse through the resources on your computer.
13. recognize and use folders and files.
14. navigate through My Computer using a multiple window interface
15. create, copy, move, rename, and delete files.
16. use Cut, Copy, and Paste with files.
17. browse through a network using Network Neighborhood.
18. use Explorer to browse through a computer's file system.

19. navigate using a single window with a dual-pane view.
20. change the view style for folder contents.
21. use the Explorer toolbar.
22. perform the major file and folder operations with Explorer.
23. recover files that were deleted.
24. create and rename shortcuts.
25. use shortcuts to access frequently used programs and documents quickly.
26. manage and use folders and shortcuts on the desktop.

R. Works Word Processing

1½ days

The student will be able to

1. start Works 4 for Windows 95.
2. access online Help.
3. use menus to perform commands.
4. work with dialog boxes.
5. configure Works 4 for Windows 95.
6. exit Works 4 for Windows 95.
7. create a document in the Word Processing tool.
8. display all special characters.
9. save and open a document.
10. move the insertion point within a document.
11. insert and delete text.
12. select text.
13. use the Undo command.
14. preview and print a document.
15. set left and right margins.
16. center text.
17. apply bold, underline, and italic character styles.
18. indent paragraphs.
19. justify paragraphs.
20. check the spelling in a document.
21. move and copy text.
22. set and remove tabs.
23. change fonts.

S. Works Spread sheeting

1 day

The student will be able to

1. create a spreadsheet.
2. use the mouse or keys to move around in a spreadsheet.
3. enter text and numbers.
4. wrap text within a cell.
5. align cell contents.
6. enter a simple formula.

7. edit the contents of a cell.
8. save and print a spreadsheet.
9. open an existing spreadsheet.
10. clear an individual cell and a range of cells.
11. move data.
12. format numbers.
13. adjust column widths.
14. enter formulas.
15. understand how a formula is calculated.
16. copy formulas.
17. use the SUM, Avg, MAX, and MIN statistical functions.

T. Works Charting **1 day**

The student will be able to

1. sort data
2. create bar and 3-D bar charts.
3. use a chart to ask what-if questions.
4. name charts.
5. create a line chart.
6. add grid lines, data labels, and titles to a chart.
7. create a pie chart and explode a slice.
8. save and print charts.

U. Works Database **1½ days**

The student will be able to

1. use the database screen.
2. design a form.
3. enter and edit data.
4. enhance the form design.
5. add records.
6. print a form.
7. edit field contents in List view.
8. change field widths.
9. sort records.
10. insert and delete fields.
11. set a default value.
12. search for data and use filters.
13. print in List view.
14. hide fields.

V. E-mail **½ day**

The student will be able to

1. send and receive e-mail messages.
2. send and read attachments to e-mail messages.

W. Newsgroups **½ day**

The student will be able to

1. use a newsreader to subscribe to a newsgroup.
2. read an article from a newsgroup.
3. reply to an article from a newsgroup.
4. post an article to a newsgroup.

X. FTP **½ day**

The student will be able to

1. use WSFTP to move a file from the UNIX system to a specific directory on a local PC.
2. use WSFTP to move a file from a local PC to a specific directory on the UNIX system.

Y. World Wide Web **2 days**

The student will be able to

1. use Netscape Navigator to browse the web.
2. be able to use several search engine to find information about a particular topic.

Z. Logo **1 day**

The student will be able to

1. use the drawing commands of MSWLogo to create simple figures like squares, circles, rectangles, etc.
2. use the drawing commands of MSWLogo to create a figure of their own design.
3. use geometry and algebra to calculate distances and angles to create figures with MSWLogo.

AA. Home Page **1 day**

The student will be able to

1. use simple HTML tags to create a web page.
2. use some web page authoring software to create a web page.

AB. Chapter 15 - Systems Analysis and Design

1 day

The student will be able to

1. be able to define the terms *systems*, *analysis*, and *design*.
2. know the principal functions of the systems analyst.
3. be able to list and describe the phases of the systems development life cycle.
4. become acquainted with data-gathering and analysis tools.
5. become acquainted with systems design tools.
6. understand the concept of prototyping.
7. appreciate the predominance of maintenance.