NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
CSC 110 - INTRODUCTION TO COMPUTING (3 CR.)

Course Description

Introduces problem solving through computer applications and via a programming language. Examines development of computers, social and ethical implications of computers, and properties of programming languages. Covers input, storage, data manipulation, software and hardware. Lecture 3 hours per week.

General Course Purpose

The general purpose of this course is to give students a hands-on introduction to an operating system, commonly used application software, and elementary high-level programming language concepts, and also, to examine some of the social and ethical implications of computers in our society. This course fulfills competency requirements for students pursuing the A.S. in Science and the Virginia Math Teaching endorsement course.

Course Prerequisites/Corequisites

None

Course Objectives

Upon completion of this course, the student will be able to:

- Identify, explain the purpose of, and use the basic hardware components of a personal, desktop computer system.
- Identify several tasks for which an operating system is responsible.
- Use a file utility program to copy, move, and delete files and make and delete subdirectories.
- Understand the basic difference between system software and application software.
- Application Software – use application programs at the basic/introductory level for the following applications: Word processing, Spreadsheets, Database manipulation, Email, Network browsing.
- Send and receive email.
- Use an Internet browser program to connect to web sites and retrieve information
- Use elementary control structures and/or elementary event-handling constructs of a programming language to write an elementary computer program.
- Solve an elementary problem by use of a computer and a programming language.
- Cite several ways that computers are changing the way we do things in our society.
- State at least two malicious activities against which a user must protect him/herself when using a computer in conjunction with the Internet.

Major Topics to be Included

1. Introduction to Computers
   A. History
   B. Hardware
   C. Software
   D. Internal representation
   E. Role in society
   F. Ethical use of computers
2. Operating System
   A. Environment
   B. Files
      i. Creation
      ii. Management
   C. Graphical User Interfaces
3. Word Processing
   A. Document creation
   B. Editing
   C. Formatting
4. Spreadsheet
   A. Creation
   B. Modification
   C. Graphs
5. Database
   A. Creation
   B. Querying
   C. Simple Forms and Reports
6. Computer Communication
   A. E-mail
   B. Internet
7. Programming
   A. Problem Solving
   B. Programming Methodologies
   C. Algorithms
   D. Programming Constructs
      i. Simple data types
      ii. Input/Output
      iii. Sequence
      iv. Iteration
      v. Selection
   E. Coding and Syntax
   F. Testing and Debugging
8. Other optional content
   A. Integration of software applications
   B. Presentation graphics
   C. Creation of a simple web page

**Suggested Time Allocation per Topic**

In order to standardize the core topics of CSC 110 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 recommended. There are normally 48 student-contact-hours per semester for a three-unit course. The last category, Other optional content, leaves ample time for an instructor to tailor the course to special needs or resources.

<table>
<thead>
<tr>
<th>Ref</th>
<th>Topic</th>
<th>Hours</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction, Hardware, Software, Ethics, etc.</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>II</td>
<td>Operating System (and GUI)</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>III</td>
<td>Word Processing</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>IV</td>
<td>Spreadsheets</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>V</td>
<td>Data Base</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>VI</td>
<td>Computer Communication (Internet and e-mail)</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>VII</td>
<td>Programming</td>
<td>11</td>
<td>23</td>
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<tr>
<td>VIII</td>
<td><strong>Other</strong> optional content</td>
<td>8</td>
<td>17</td>
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<tr>
<td></td>
<td>Exams and quizzes</td>
<td>4</td>
<td>8</td>
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<td></td>
<td><strong>Total</strong></td>
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