FOUNDATION CLASS PROGRAMMING USING C++
CST 2695

Class Hours: 3.0 Credit Hours: 4.0
Laboratory Hours: 3.0 Date Revised: Fall 00

Catalog Course Description:

A study of visual programming design and implementation using foundation class components. Topics include C++ support of windows and controls, event handling, images, fonts and colors. This course is a practical application of object-oriented programming concepts.

Entry Level Standards:

The entering student should have familiarity with the computer language C++, editing C source code, and writing successful C programs.

Prerequisite:

CST 2690 or department approval

Textbook(s) and Other Reference Materials Basic to the Course:


I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction, review of C++ concepts.</td>
</tr>
<tr>
<td>2</td>
<td>Introduction to the MFC, creating an MFC application skeleton.</td>
</tr>
<tr>
<td>3</td>
<td>Forms and controls.</td>
</tr>
<tr>
<td>4</td>
<td>Forms and controls.</td>
</tr>
<tr>
<td>5</td>
<td>Applying menus and message boxes.</td>
</tr>
<tr>
<td>6</td>
<td>Processing messages, implementing dialog boxes.</td>
</tr>
<tr>
<td>7</td>
<td>Managing text and graphical output.</td>
</tr>
<tr>
<td>8</td>
<td>Icons, cursors, and bitmaps.</td>
</tr>
<tr>
<td>9</td>
<td>Advanced controls including toolbars, tooltips, tree views and calendars.</td>
</tr>
<tr>
<td>10</td>
<td>Create property sheets and wizards.</td>
</tr>
</tbody>
</table>
II. Course Objectives*

A. Become familiar with rapid application development (RAD) techniques available in C++ through the MFC. IV, VI, VII, XI
B. Create complex C++ programs to solve complex problems. III, V, VI, XII
C. Reinforce good programming habits introduced in earlier courses. II, III, VI, VIII
D. Develop industry standard graphic user interfaces (GUI) for applications using Windows controls. II, III, IV, V, VI, VIII, XI, XII

*Roman numerals after course objectives reference goals of the Computer Science Technology program.

III. Instructional Processes*

Students will:

1. Participate in a project development team. Communication Outcome, Problem Solving and Decision Making Outcome, Personal Development Outcome, Transitional Strategy, Active Learning Strategy
2. Use professionally accepted methods and materials in completion of a final project. Technological Literacy Outcome, Personal Development Outcome, Transitional Strategy
3. Use a variety of techniques to present a group project. Communication Outcome, Active Learning Strategy
4. Participate in a peer review of team projects. Problem Solving and Decision Making Outcome, Communication Outcome, Transitional Strategy, Active Learning Strategy
5. Practice the elements of work ethic such as punctuality, professionalism, dependability, cooperation and contribution. Personal Development Outcome

*Strategies and outcomes listed after instructional processes reference Pellissippi State’s goals for strengthening general education knowledge and skills, connecting coursework to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*

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

1. Understand the Windows based language development environment for C++ programs. A B C
2. Use menus.  A B D
3. Use message boxes.  A B D
4. Use icons.  A B D
5. Use cursors.  A B D
6. Use bitmaps.  A B D
7. Use advanced controls.  A B C D
8. Understand message processing.  A B D
9. Create property sheets.  A B D
10. Create wizards.  A B D
11. Use and create help systems.  A B C D
12. Understand class hierarchy in the foundation class system.  A B C D

*Letters after performance expectations reference the course objectives listed above.

V. Evaluation:

A. Testing Procedures:

There will be two tests and a final exam.

B. Laboratory Expectations:

There will be several individual lab assignments.

C. Field Work:

N/A

D. Other Evaluation Methods:

Students will work on a final project as a team. Each team will consist of two members. The team will design, code a program, and present their final findings to the class. The subject of the project must be approved by the instructor at least a month before the presentation of projects. Each team member will be assessed based on his/her participation in the project. Individual work is strongly discouraged. All team members MUST participate in coding the program.

E. Grading Scale:

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Exercises</td>
<td>300</td>
</tr>
<tr>
<td>Final Project</td>
<td>200</td>
</tr>
<tr>
<td>Mid-term Exam</td>
<td>250</td>
</tr>
<tr>
<td>Final Exam</td>
<td>250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

Grading Scale:

930 - 1000  A
VI. Policies:

Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all courses must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course.