Class Hours: 2
Laboratory Hours: 2

Catalog Course Description
An introduction to C++ programming concepts and problem solving using an Object Oriented approach. Problem analysis, design concepts, code formulation, command, statement and programing structures, internal and external data utilization and application development are included in the course.

Prerequisites
None

Corequisites
None

Textbook(s) and Other Course Materials [REQUIRED]

- 4GB (minimum) Thumb USB Storage Drive.

Week/Unit/Topic Basis

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
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<tbody>
<tr>
<td>1</td>
<td>Course Overview</td>
</tr>
<tr>
<td>2</td>
<td>Editor, Programming, Flowcharting &amp; Pseudo Code, C++ Language Fundamentals, Code Organization, Lab Assignment</td>
</tr>
<tr>
<td>3</td>
<td>Data Input/Output, Structure, Constants, Variables, Expressions, Statements, Strings, I/O, Math Functions, Lab Assignments</td>
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<tr>
<td>4</td>
<td>Decision Structures, Good Program Design, Indentation, Lab Assignments</td>
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<tr>
<td>5</td>
<td>Repetition, Counters, Event, Looping, Validation, Lab Assignments</td>
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<tr>
<td>6</td>
<td>Functions, Voids, Parameter Passing, Scope, Lab Assignments</td>
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<tr>
<td>7</td>
<td>Arrays, Lab Assignments, Mid-Term Review</td>
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<tr>
<td>8</td>
<td>Searching, Sorting and Algorithm Analysis, Lab Assignments, MIDTERM</td>
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<tr>
<td>9</td>
<td>Pointers, Lab Assignments</td>
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Course Goals*

The course will

A. Provide lab use of the C++ compiler so that students can provide data as input and produce calculated outputs. I, II,III, IV.
B. Furnish entry level understanding of C++ object oriented programming concepts. I, II, III, IV, V.
C. Supply instruction in the construction of C++ language based programming code. I, II, III, IV, V.
D. Provide the application of business, engineering and math problem solving techniques to the C++ language coding standards. I, II, III, IV, V.
E. Supply entry level understanding of data storage, program storage, programming syntax, usage, compiling and programming concepts. I, III, IV, V.

*Roman numerals after course objectives reference goals of the CIT program.

Expected Student Learning Outcomes*

Students will

1. Use a C++ compiler and its editing features. (A,B,C,D,E)
2. Formulate program code from specifications, real-world data representation, business and engineering problems and real-world problem examples. (A,B,C)
3. Use the computer system and its operating environments. (A,B,C, D,E)
4. Use the C++ language to interact with client users to produce data output and accurate results. (A,B,D,E)
5. Apply computer problem solving in the business and engineering environments. (A,B,C,D,E)
6. Use the C++ programming language in problem solving, data manipulation, data storage and retrieval, menu handling and error detection. (A,B,C,D,E)
7. Take real world problems and generate C++ programming code to solve for those applications. (A,B,C,D,E)

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.
Evaluation

A. **Testing Procedures: 50% of grade**
   There will be assignments weekly to access knowledge and proficiency of the products used. There will be quizzes, a comprehensive midterm and comprehensive final test.

B. **Laboratory Expectations: 50% of grade**
   There will be a number of labs from each section. Lecture and Lab attendance is required. Assignments will be given and must be completed and handed in at the expected date and time. All assignments turned in late will earn a reduced score at the discretion of the instructor.

C. **Field Work**
   N/A

D. **Other Evaluation Methods**
   N/A

E. **Grading Scale**
   
<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100%</td>
</tr>
<tr>
<td>B+</td>
<td>88 – 92%</td>
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<tr>
<td>B</td>
<td>83 – 87%</td>
</tr>
<tr>
<td>C+</td>
<td>78 – 82%</td>
</tr>
<tr>
<td>C</td>
<td>73 – 77%</td>
</tr>
<tr>
<td>D</td>
<td>65 – 72%</td>
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<tr>
<td>F</td>
<td>Below 65%</td>
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Policies:

Attendance Policy
   Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

Academic Dishonesty
   Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

   • Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
   • Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
• Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
• Taking an exam for another student.
• Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
• Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities
Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services (http://www.pstcc.edu/sswd/) may be contacted via Disability Services email or by visiting Alexander 130.