PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

INTRODUCTION TO PROGRAMMING USING C
CSIT 1540 (formerly CST 1540)

Class Hours: 3.0 Credit Hours: 4.0
Laboratory Hours: 3.0 Date Revised: Spring 03

NOTE: This course is not designed for transfer credit.

Catalog Course Description:
A study of C programming language, problem solving and algorithm development. Topics include language structure, syntax, I/O techniques, functions, program development and applications.

Entry Level Standards:
The entering student should have a familiarity with computers. The student should be able to keyboard at least 23 words per minute. The student must have math, writing, verbal and English language skills at the college level.

Corequisite:
CSIT 1110

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

*A Guide to Programming Logic and Design* by Joyce Farrell, Course Technology.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to Programming and Logic; Top-Down Program Development</td>
</tr>
<tr>
<td>2</td>
<td>Compile/Link/Execute/Print; Sequential Structure, Data Types; Declarations, Print( ) Functions</td>
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<tr>
<td>3</td>
<td>Modules, Documentation, Assignments Addresses, Interactive Input, scanf() Functions</td>
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<tr>
<td>4</td>
<td>Making Decisions, Relational Expressions, If/Else Statement</td>
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<tr>
<td>5</td>
<td>Review, Test 1</td>
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<tr>
<td>6</td>
<td>Looping, While/For/Do Statements</td>
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<tr>
<td>7</td>
<td>Function Definitions</td>
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<tr>
<td>8</td>
<td>Functions (continued), Review</td>
</tr>
<tr>
<td>9</td>
<td>Test 2; Standard Library Functions</td>
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</tbody>
</table>
II. Course Objectives*:

A. Understand the syntax and semantics of C Programming language. II III IV VI VII VIII IX XI XII

B. Write C programs to solve a wide variety of problems. II III IV VI VII VIII IX XI XII

C. Reinforce structured programming concepts. I III V VI VII IX X XI

D. Acquire problem-solving and programming skills with top-down design principles. V, VI, IX, X, XII

E. Understand the basic logic of algorithms and apply them to programming. V, VI, X, XI, XII

F. Obtain the basic understanding of software development. III, IV, V, VI, VII, XI

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

III. Instructional Processes*:

Students will:

1. Gain proficiency in an industry standard operating system. Technological Literacy Outcome, Information Literacy Outcome, Active Learning Strategy

2. Gain proficiency in an industry standard high-level programming language. Technological Literacy Outcome, Information Literacy Outcome, Numerical Literacy Outcome, Active Learning Strategy, Communication Outcome, Personal Development Outcome

3. Learn to analyze and solve problems using structured analytical techniques. Technological Literacy Outcome, Information Literacy Outcome, Numerical Literacy Outcome, Active Learning Outcome, Personal Development Outcome, Problem Solving and Decision Making Outcome

4. Use professionally accepted methods and materials in completion of applications. Technological Literacy Outcome, Personal Development Outcome, Transitional Strategy, Active Learning Strategy

5. Use professional tools to produce software components and documentations. Technological Literacy Outcome, Personal Development Outcome, Transitional Strategy, Active Learning Strategy
6. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Personal Development Outcome*

7. Use the Internet as a medium for obtaining documentation and instruction. *Communications Outcome, Personal Development Outcome, Technological Literacy Outcome, Information Literacy Outcome, Transitional Strategy, Active Learning Strategy*

8. Use Computer-Based Training for obtaining instruction. *Communication Outcome, Personal Development Outcome, Information Literacy Outcome, Active Learning Strategy*

9. Plan the logic for complete business programs. *Technological Literacy Outcome, Information Literacy Outcome, Numerical Literacy Outcome, Problem Solving and Decision Making Outcome, Communication Outcome, Personal Development Outcome, Active Learning Strategy*

*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. Recognize basic data types. A, B
2. Use arithmetic, logical and conditional operators. A, B, D
3. Use data conversions and casts. A B
4. Use arrays, strings and pointers. A, B, D
5. Use program control structures. A, B, C, D
6. Use library and programmer developed functions. A, B, C
7. Use parameter passing. A, B, C
8. Understand storage classes and their usage. A, B, C
9. Use the preprocessor and macro substitution. A, B, C
10. Relate external files. A, B, C
11. Maintain portability of C programs. B, C
13. Learn fundamental algorithms. D, E
14. Write well-structured programs. A, D, E, F

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

**V. Evaluation:**

A. Testing Procedures:
Students are evaluated primarily on the basis of tests and laboratory assignments. Each instructor must provide full details the first week of class via a syllabus supplement. A minimum of three tests is recommended. Tests will cover material presented in class. Tests are not to be missed without a valid excuse.

B. Laboratory Expectations:

Lab attendance is required. Assignments will be given and must be completed and handed in at the designated date. The student is expected to turn in all required documentation for each lab.

C. Field Work:

N/A

D. Other Evaluation Methods:

Class participation, quizzes and homework will also comprise the final grade for the course.

E. Grading Scale:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93 – 100</td>
<td>A</td>
</tr>
<tr>
<td>88 – 92</td>
<td>B+</td>
</tr>
<tr>
<td>83 – 87</td>
<td>B</td>
</tr>
<tr>
<td>78 – 82</td>
<td>C+</td>
</tr>
<tr>
<td>73 – 77</td>
<td>C</td>
</tr>
<tr>
<td>65 – 72</td>
<td>D</td>
</tr>
<tr>
<td>Below 65</td>
<td>F</td>
</tr>
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VI. Policies:

A. 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. *(Pellissippi State Catalog)*

B. Academic Dishonesty:

Plagiarism, cheating and other forms of academic dishonesty are prohibited. A student guilty of academic misconduct, either directly or indirectly through participation or assistance, is immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions that may be imposed through the regular Pellissippi State procedures as a result of academic misconduct, the instructor has the authority to assign an F or a zero for the exercise or examination or to assign an F in the course.

C. Other Policies:

Students are expected to promptly attend all lecture and lab classes as assigned. If a class is missed, student must make up all work and get notes and/or handouts.