INTRODUCTION TO COMPUTER SCIENCE  
CSIT 1020  (formerly CST 1020)  

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

Catalog Course Description:

Problem solving and algorithm development. Organization and characteristics of modern digital computers. Emphasis on developing good programming habits. Building abstractions with procedures and data. Programming in a modern computing language. Program development using the Unix operating system. This course is intended for university parallel students.

Entry Level Standards:

The entry level student is not expected to have familiarity with computers. The student must have math, writing, verbal and English language skills at the college entry level.

Prerequisite:

None

Corequisite:

MATH 1730 or equivalent

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

Required:
Hanly, Jerri R. and Elliot B. Koffman; Problem Solving and Program Design in C; Addison-Wesley-Longman; third edition update
Recommended:

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Overview of Computer Science</td>
</tr>
<tr>
<td>2</td>
<td>Overview of C, variables, arithmetic expressions, formatting output</td>
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<tr>
<td>3</td>
<td>Overview of C, variables, arithmetic expressions, formatting output</td>
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<tr>
<td>4</td>
<td>Functions</td>
</tr>
<tr>
<td>5</td>
<td>Selection Statements</td>
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<td>6</td>
<td>Selection Statements, Repetition statements</td>
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II. Course Objectives*:

A. Use the Unix operating system and vi Editor. II, IV, VI, IX, XI
B. Understand the syntax and semantics of C programming language. III, IV, VI
C. Acquire problem-solving and programming skills with top-down design principles. V, VI, IX, X, XII
D. Understand the dynamic nature of computer algorithms and apply them to programming. V, VI, X, XI, XII
E. Debug C programs. V, VI, IX, X, XI
F. Obtain a basic understanding of computer architecture and program execution. III, IV, VI, XI
G. Obtain a basic understanding of software development. III, IV, V, VI, XI

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

III. Instructional Processes*:

Students will:

1. Use professional tools to produce software components and documentation. Technological Literacy Outcome, Personal Development Outcome, Transitional Strategy, Active Learning
2. Gain proficiency in an industry standard operating system. Technological Literacy Outcome, Information Literacy Outcome, Numerical Literacy Outcome, Active Learning
3. Gain proficiency in an industry standard high-level programming language. Technological Literacy, Information Literacy, Numerical Literacy, Active Learning, Communication, Personal Development
4. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. Personal Development Outcome
5. Learn to analyze and solve problems using structured analytical techniques. Technological Literacy Outcome, Information Literacy Outcome, Numerical Literacy Outcome, Active Learning Strategy, Personal Development Outcome, Problem Solving and Decision Making Outcome

6. Use professionally accepted methods and materials in completion of applications. Technological Literacy Outcome, Personal Development Outcome, Transitional Strategy, 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. Demonstrate proficiency in Unix and the vi Editor. A
2. Use the vi Editor to create C source files. A
3. Compile source files to create object files. A
4. Learn C syntax and semantics of programs including program header, data types, variables, simple I/O, functions, and parameters, conditional statements, for and while loops, reading and tracing programs. B, C, E
5. Learn C syntax and semantics of programs including arrays, structures, and pointers B, C, E
6. Understand aspects of computer problem-solving. C, D, E
7. Learn fundamental algorithms. C, D, E
8. Write well-structured programs. B, C, D, E
9. Develop the ability to debug C programs. A, F

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

V. Evaluation:

A. Testing Procedures:

There will be at least 3 tests. Tests will be short answer/essay (writing code). Failure to make a passing exam average will result in a grade of F for the course. Tests may only be made up for excused absences. An excused absence is one that can be verified by supporting documentation.

B. Laboratory Expectations:

There will be 7-9 lab assignments. Attendance is expected at each lab period. Failure to make a passing lab average will result in a grade of F for the course.

C. Field Work:

N/A
D. Other Evaluation Methods:

N/A

E. Grading Scale:

- 93 – 100 A
- 88 – 92 B+
- 83 – 87 B
- 78 – 82 C+
- 73 – 77 C
- 65 – 72 D
- Below 65 F

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:

In the event that you have an emergency beyond your control, you must notify the instructor as soon as possible.