

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE  
MASTER SYLLABUS

**INTRODUCTION TO COMPUTER SCIENCE  
CSIT 1020**

**Class Hours: 3.0**

**Credit Hours: 4.0**

**Laboratory Hours: 3.0**

**Revised: Fall 06**

**Catalog Course Description:**

Problem solving and algorithm development. Organization and characteristics of modern digital computers. Emphases on developing good programming habits. Building abstractions with procedures and data. Programming in a modern computing language. Program development using UNIX operating system. This course is intended for University Parallel students majoring in Computer Science or Computer Engineering. It is not designed as an elective for non-majors.

**Entry Level Standards:**

The entry-level student is expected to have some familiarity with computers. The student must have math, writing, verbal and English language skills at the college entry level.

**Prerequisites:**

None.

**Corequisites:**

MATH 1730 or equivalent.

**Textbook(s) and Other Course Materials:**

Hanly, Jerri R. and Elliot B. Koffman; *Problem Solving and Program Design in C*; Addison-Wesley-Longman; fourth edition update (required).

Schildt, Herbert, *C: The Complete Reference*, 4<sup>th</sup> Edition, McGraw Hill. (recommended).

**I. Week/Unit/Topic Basis:**

<b>Week</b>	<b>Topic</b>
1	Overview of Computer Science
2	Overview of C: variables, arithmetic expressions
3	Overview of C: formatting output, text file I/O
4	Introduction to Functions
5	Selection Statements
6	Selection Statements; Repetition statements

7	Repetition Statements; Functions
8	Functions and Modular Programming
9	Data Representation
10	Data Representation; Arrays
11	Arrays
12	Strings
13	Structures
14	Text and Binary Files; Dynamic Data Structures
15	Final Exam Period

## II. Course Objectives\*:

- A. Use the Unix operating system and vi Editor. VII.1, 4
- B. Understand the syntax and semantics of C programming language. I.3, VII.2
- C. Acquire problem-solving and programming skills with top-down design principles. I.4, 6, V.2
- D. Understand the dynamic nature of computer algorithms and apply them to programming. V.1, 2, 3, 4, 5, 6
- E. Debug C programs. V.2, VII.6
- F. Obtain a basic understanding of computer architecture and program execution. IV.1, 4, VII.2, 4, 5
- G. Obtain a basic understanding of software development. I.1, VI.4, 5, VII.3, 4, 5, 6

\*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, Communication Outcome, Transitional Strategy, Active Learning Strategy*
2. Gain proficiency in an industry standard operating system. *Technological Literacy Outcome, Active Learning Strategy*
3. Gain proficiency in an industry standard high-level programming language. *Technological Literacy Outcome, Active Learning Strategy, Communication Outcome*
4. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Social/Behavioral Sciences Outcome*
5. Learn to analyze and solve problems using structured analytical techniques. *Technological*

*Literacy Outcome, Mathematics Outcome, Active Learning Strategy, Natural Sciences Outcome, Transitional Strategy*

6. Use professionally accepted methods and materials in completion of applications.  
*Technological Literacy, Communication Outcome, Transitional Strategy, Active Learning*

\*Strategies and outcomes listed after instructional processes reference TBR's goals for strengthening general education knowledge and skills, connecting course work 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, B
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, D, E
6. Understand aspects of computer problem-solving. C, D, E, G
7. Learn fundamental algorithms. C, D, E, G
8. Write well-structured programs. B, C, D, E, G
9. Develop the ability to debug C programs. A, E, F, G

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

#### **V. Evaluation:**

##### **A. Testing Procedures:**

A minimum of 3 tests will be given. Tests may be a combination of multiple choice, short answer, and 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 7-12 lab assignments. Attendance is expected at each lab period. Attendance for a Web course is defined as regular visits to the Web site with required work being uploaded for grading as per the course schedule. 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:

Assignment of quizzes, homework, and/or participation grades is at the discretion of each instructor. Instructors will outline the weight of each graded component in an addendum to this syllabus.

E. Grading Scale:

93 - 100	A
88 - 92	B+
83 - 87	B
78 - 82	C+
73 - 77	C
65 - 72	D
0 - 64	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. [NOTE: No differentiation is noted for excused/unexcused absences. These will be treated as an absence.] (Pellissippi State Catalog)

B. Academic Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions which 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. (Pellissippi State Catalog)

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please inform the instructor immediately. Please see the instructor privately after class or in his/her office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127 or 131 or by phone: 694-6751(Voice/TTY) or 539-7153.

D. Other Policies:

Computer Usage Guidelines:

College-owned or -operated computing resources are provided for use by students of Pellissippi State. All students are responsible for the usage of Pellissippi State's computing resources in an effective, efficient, ethical and lawful manner. (Pellissippi State Catalog)

