

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

**C++: AN INTRODUCTION TO PROGRAMMING
CSIT 1541**

Class Hours: 3.0

Credit Hours: 4.0

Laboratory Hours: 3.0

Revised: Spring 07

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

An introduction to programming using the C++ language. Extensive problem solving, algorithm development, programming logic, object-oriented construction, syntax fundamentals and program design methodologies are used to provide a foundation of understanding computer programming.

Entry Level Standards:

College level reading and math skills; keyboarding skills of at least 23 wpm

Prerequisites:

None

Textbook(s) and Other Course Materials:

Absolute C++, Second Edition, by Walter Savitch, Addison Wesley.

I. Week/Unit/Topic Basis:

Week	Topic
1	Introduction
2	Data Types and Operators
3	Program Control Statements
4	Arrays
5	Exam 1
6	Strings
7	Pointers
8	Functions I
9	Functions II
10	Exam 2
11	More Data Types and Operators

- 12 Classes and Objects
- 13 Inheritance, Virtual Functions and Polymorphism
- 14 C++ I/O System
- 15 Final Exam (Exam 3)

II. Course Objectives*:

- A. Become familiar with 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 a 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, Active Learning*
2. Gain proficiency in an industry standard high-level programming language. *Technological Literacy, Mathematical Outcome, Active Learning, Communication*
3. Learn to analyze and solve problems using structured analysis techniques. *Technological Literacy, Mathematical Outcome, Active Learning*
4. Use professionally accepted methods and materials in completion of applications. *Technological Literacy, Transitional Strategy, Active Learning.*
5. Use professional tools to produce software components and documentations. *Technological Literacy, Transitional Strategy, Active Learning*
6. Use the Internet as a medium for obtaining documentation and instruction. *Communications, Technological Literacy, Transitional Strategy, Active Learning.*

*Strategies and outcomes listed after instructional processes reference TBR'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. Understand the use of external files. A, B, C
11. Maintain portability of C++ programs. B, C
12. Understand aspects of computer problem-solving. D,E
13. Learn fundamental algorithms. D, E

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

V. Evaluation:

A. Testing Procedures:

Lab Exercises	300 points
Final Project	200 points
Mid-term Exam	250 points
Final Exam	250 points
Total	1000 points

B. Laboratory Expectations:

There will be several individual lab assignments.

C. Field Work:

None is required.

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:

930 - 1000	A
870 - 929	B+
830 - 869	B
770 - 829	C+
700 - 769	C
600 - 699	D
Below 600	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.]

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.

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.

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.