

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

**OBJECT-ORIENTED PROGRAMMING USING C++
CSIT 2690 (formerly CST 2690)**

Class Hours: 3.0

Credit Hours: 4.0

Laboratory Hours: 3.0

Revised: Fall 2005

NOTE: This course is not designed for transfer credit.

Catalog Course Description:

The study of object-oriented programming and design through the practical application of the C++ language. The course covers object-oriented design, data abstraction and encapsulation, operator overloading, inheritance, polymorphism, stream I/O and object-oriented data structures.

Entry Level Standards:

The entering student must be familiar with the Windows environment. The student is expected to have moderate programming skills in a high-level language. Problem solving skills will be essential.

Prerequisite:

One programming course

Textbook(s) and Other Course Materials:

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

I. Week/Unit/Topic Basis:

Week	Topic
1	Intro to C++; I/O Operations
2	Streams and File I/O
3	Template Functions; Overloading and Recursions
4	Arrays, Vector and Structures
5	Classes, Constructors and Other Tools
6	Operators Overloading, Friends and References
7	Standard Class Strings
8	Pointers and Dynamic Arrays
9	Separate Compilations and Name Spacing
10	Inheritance
11	Polymorphism and Virtual Functions

- 12 Templates
- 13 Exception Handling
- 14 Standard Template Library
- 15 Final Exam Period

II. Course Objectives*:

- A. Demonstrate an understanding of computer program design principles and techniques. I III V VII XI
- B. Demonstrate mastery of basic C programming statements that form a subset of the C++ language. I III V VI IX
- C. Show a working knowledge of the C++ language by designing, coding, and implementing attractive and efficient C++ programs. I II IV V VI IX
- D. Demonstrate proficiency and knowledge of the use of the Borland C++ compiler in creating executable programs from C++ language statements. I II IV IX
- E. Demonstrate knowledge of the concepts, methods, and differences associated with Object-Oriented Programming. I III IX
- F. Demonstrate effective group participation in the design and implementation of computer programs. I II III IV V VI X 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, Transitional Strategy, Active Learning Strategy*
- 2. Create well-documented applications based on instructor specifications. *Communication Outcome, Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy*
- 3. Participate in a software development team. *Communication Outcome, Transitional Strategy, Active Learning Strategy*
- 4. Practice elements of the work ethic such as punctuality, professionalism, dependability, cooperation, and contribution. *Social/Behavioral Sciences Outcome*
- 5. Present a finished product to the class. *Communication Outcome, Transitional Strategy, Active Learning Strategy*
- 6. Use professionally accepted methods and materials in completion of applications. *Technological Literacy Outcome, Transitional Strategy, Active Learning Strategy*

*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. Effectively use terminology associated with the computer system, C++, and computer language compilers. A C D E
2. Explain the processes used to produce executable programs from C++ code. C D E
3. Write complete programs in both C and C++ from scratch, with only occasional need to consult additional written language documentation. B C E
4. Demonstrate knowledge of Object-Oriented design and implementation principles. E
5. Effectively apply good work ethics, teamwork, professionalism, and quality standards. B C F
6. Demonstrate the ability to work effectively both individually and as part of a group to produce programs that produce correct results as well as being attractive, readable, and modifiable. A B C D E F

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

V. Evaluation:

A. Testing Procedures:

Exams will comprise 50% of the final grade. Three exams will be given during the course of the semester. The first two exams are worth 150 points. The final exam is comprehensive and is worth 200 points. There will be no make-up tests unless prior arrangements have been made with the instructor.

B. Laboratory Expectations:

Programming assignments will be made during the course of the semester. A late penalty may be imposed on any overdue assignment. Failure to satisfactorily complete all labs may result in a grade of F in the course. Labs will count for 400 points (40%) of the final grade.

C. Field Work:

N/A

D. Other Evaluation Methods:

A number of quizzes and short assignments may be assigned throughout the semester. Most of these will be announced in the class/lab in which they are to be completed and graded.

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. [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:

Computer Usage Policies:

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*)