CSC112 Fall 2010
Fundamentals of Computer Science

Professor: Torgersen  E-mail: torgerse@wfu.edu  Office Phone: 758-5536

Office Hours: Monday and Wednesday 3:00 to 4:00 and by appointment.

Text: Absolute C++ by Walter Savitch.

Goals:

1. Proficiency in using the UNIX operating system
2. Programming skills in C/C++
   (a) Procedural programming
   (b) Object-oriented programming
   (c) Event driven programming
3. Problem solving skills

Topics:

1. Overview of the UNIX operating system.
   (a) Online reference: http://www.ee.surrey.ac.uk/Teaching/Unix
2. Review: variables, control structures and functions
3. Review: scope, recursion, and function overloading
4. Programming tools: separate compilation, header files, make
5. Arrays
6. Sorting, searching, ordered and unordered lists performance evaluation
7. Pointers
8. Dynamic memory allocation and error checking
9. Reference variables and C-style parameters
10. C-strings, command line arguments, and arrays of pointers
11. Structures (struct), Unions, and advanced data types
12. Abstract data types and classes; design, encapsulation
13. Classes: member data, public, private and protected data
14. Classes: member functions, constructors and destructors
15. Function and operator overloading, friends
16. Pointers to classes and classes with pointers
17. Linked lists, doubly linked lists, implementation, and iterators
18. Inheritance, multiple inheritance
19. Polymorphism and virtual functions
20. Class templates, function templates

Expectations:

1. Class participation.
2. Communicate if things get complicated.
3. Your best effort.

Grading:
Four exams (65%), 13 labs, some take home problem sets (35%). Expected exam dates are Monday Sept. 20, Wednesday, Oct. 13, Wednesday, Nov. 10, and Tuesday, December 7. Programming assignment(s) must be submitted ready to compile and run under Linux.

Disability Notice:
If you have a disability that may require an accommodation for taking this course, then please contact the Learning Assistance Center (758-5929) within the first two weeks of the semester.

Pandemic Planning Notice:
The University has requested that faculty collect personal contact information as part of emergency planning and preparation. The information you provide is strictly confidential.