CSC112   Fall 2010
Fundamentals of Computer Science

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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.