

CS 1410 Challenge Exam Study Guide

2015/12/14

1. Operators
 - a. +, -, *, /, %, =, operation with assignment, pre/post increment/decrement, and ?:
 - b. &&, ||, !
2. Flow of control statements:
 - a. if, if-else, if-else ladder, switch, default, and break
 - b. dangling else
 - c. for, while, do-while, break, continue, and test at the top versus test at the bottom
 - d. null-statement
 - e. block-structure
3. Functions and function arguments and return values
 - a. pass by value, pass by reference, and pass by pointer (pass by value where the value is an address)
 - b. default arguments
 - c. the address of operator
 - d. the deference/indirection operator
4. Arrays and array function arguments
5. Structures: members/fields, the dot operator, and the arrow operator
6. C++ string class: string member functions including string/number conversions, C-strings and c-string functions (strlen, strcat, strcpy, strstr, strchr, strtok)
7. Classes and objects
 - a. constructors (general, default, copy, conversion)
 - b. destructors
 - c. member functions
 - d. friend and inline functions
 - e. data members
 - f. public, private, and protected
 - g. dot and arrow operators
8. Overloaded operators
 - a. friend vs. member
 - b. overloaded inserter and overloaded extractor
9. UML (diagrams and implementation in C++)
10. Class relationships
 - a. inheritance, association, composition, aggregation, and dependancy
 - b. identifying from UML diagrams; identifying from code
 - c. implementation in C++
 - d. up and down casting
 - e. overloading and overriding functions
11. Polymorphism
12. Exception handling
13. File I/O
14. Dynamic memory (new and delete)
15. Templates
16. File I/O

There are about 65 - 70 questions: multiple choice, short answer, and essay questions (programming).