

**CSC112**                      **Spring 2011**  
**Fundamentals of Computer Science**  
**Topics for Exam #1**  
**Chapters 1 through 4, Intro to arrays**

1. Basic structure of programs and functions
2. Local and global variables
3. Data types: `int`, `short`, `unsigned`, `long`, `float`, `double`, `char`, `bool`.
4. Input and output
  - (a) Stream objects `cin`, `cout`, and `cerr`
  - (b) Stream operators
  - (c) Member functions: `cin.fail()`, `cin.eof()` and `cin.get()`
5. Control Constructs
  - (a) `if` conditionals
  - (b) `while` and `for` loops.
  - (c) Use of loop control variables
6. Operators
  - (a) Arithmetic operators: `+`, `-`, `*`, `/`, `%`
  - (b) Arithmetic two-address operators: `+=`, `-=`, `*=`, `/=`, `%=`
  - (c) Logical operators: `||`, `&&`, `!`
  - (d) Bit operators: `|`, `&`, `^`, `~`
  - (e) Bit two-address operators: `|=`, `&=`, `^=`
7. Function calls and parameter passing
  - (a) formal parameters and actual parameters
  - (b) parameter passing by value
  - (c) parameter passing by reference
8. Two's complement representation of integers
  - (a) positive and negative numbers
9. Bit-wise operators
10. ASCII Character set.
  - (a) Conversion of chars to integers and vice verse.
11. Arrays
  - (a) Fixed length arrays
    - i. Indexing
    - ii. Passing an array to a function
    - iii. Selection sort
12. Problem solving skills