

**CSC112**                      **Spring 2011**  
**Fundamentals of Computer Science**  
**Topics for Final Exam**

1. Pointers
  - (a) Pointer indirection
  - (b) Linked lists
    - i. Operations: prepend, append, search, delete
2. C++ Classes
  - (a) Public and private data and functions
  - (b) Constructors & destructors
  - (c) Function members
  - (d) Friend functions
  - (e) The “this” pointer
  - (f) Overloaded operators
  - (g) Scope resolution operator
  - (h) Objects: declaring objects and using member functions
3. The “big three” and the “rule of three”
  - (a) Copy constructor
  - (b) Destructor
  - (c) Overloaded assignment operator
  - (d) Use of “big three” for memory management
4. Friend classes
5. Recursion
  - (a) Recursion vs iteration
  - (b) Solving simple problems using recursion
  - (c) Recursive binary search
6. Inheritance
  - (a) “IS A” vs. “HAS A” relation
  - (b) Base classes
  - (c) Derived classes
7. Templates
  - (a) Template class vector
8. Problem solving skills