CSC 272 **Spring 2013** **Dr. R. M. Siegfried**

Final Exam Study Guide

Please look over the Midterm Study Guide – you will be responsible for that material as well.

Lecture #6

1. Primitive data types
   a. what it means vis-à-vis the programming language and vis-à-vis the hardware.
   b. What happens when primitive data types in the programming language don't exist on the hardware?
   c. The standard data types – integer, real (or floating point), decimal, Boolean, character.
2. Not-so-primitive data types
   a. Complex numbers
   b. character strings – variable and limited dynamic and dynamic length
   c. Ordinal types – enumerated, subranges
   d. Arrays – one-dimensional, two-dimensional, indices
   e. How are multidimensional arrays implemented? (row-major vs. column-major)
   f, Associative Arrays
   g. Records
   h. Pointers

Lecture #7

1. Arithmetic expressions
   a. operator precedence
   b. operator associativity
   c. order of operand evaluation
   d. Operator overloading
2. Referential Transparency
3. Type Conversions
   a. Implicit conversions (coercion)
   b. Explicit conversions
4. Relational operators - why are they not always >, <, ==, !=, >=, <= ?
5. Boolean expression – is x < y < z legal? And what does it mean?
6. Assignment operators

Lecture #8

1. Selection Statements
   a. Nested if statements
   b. multiple-way selection statements
2. Counter Controlled loops
3. Logically Controlled loops

Lecture #9

1. Subprogram definitions (as opposed to declarations)
2. How are parameters passed
    a. Positional or Keyword or as one long array
    b. pass by value, result, reference, name
    c. default values
    d. variable numbers of parameters
3. Functions vs. procedures
4. Static vs. dynamic variables
5. Parameter type checking
6. Side effects
7. Procedure overloading

Also…
Programming in C, C++, Fortran, Basic, Scheme
Expressions and simple definitions in Forth
A few things in Perl (to be discussed)