ECE 209 Sections 602, 603, and 604 Review Sheet
Quiz 1

This quiz will be a closed book, closed notes exam. You will be given a copy of the C reference sheet, a sheet with the LC-3 instruction set, and an example of a C function translated into LC-3 code.

In your study, be sure you can do the following

Chapters 12-13

1. Show the contents of the symbol table used by the C compiler, and describe its use during compilation.
2. Explain the difference between local and global variables.
3. Describe the roles of LC-3 registers R4 and R5 in accessing variables in C programs.
4. List the fundamental data types provided in the C language.
5. Read and write C code containing local and global variable declarations; arithmetic, bit-wise, relational, and logic operators; assignment operators; conditional and iterative statements.
6. Given a C procedure, generate the appropriate LC-3 symbol table.
7. Given a short section of C statements, generate appropriate LC-3 instructions.
8. Evaluate C expressions, following the operator precedence rules of C.

Chapter 14

9. Describe the format of an activation record for the LC-3. Show the contents of the activation record during the execution of a particular function.
10. Describe how the run-time stack is used during the execution of a C program.
11. Explain how the following are used in executing C code: return value, return address, dynamic link.
12. Generate the LC-3 assembly language code that corresponds to a function call (i.e., code required by the calling function).
13. Generate the LC-3 assembly language code that corresponds to a function definition.

Chapter 16

14. Declare and use pointers and arrays in C. Show how the contents of arrays are stored in memory.
15. Write a C function that accepts pointer arguments and describe its operation.
16. Generate LC-3 assembly language code that corresponds to C code using pointers and arrays.
17. Write C code that defines and operates on strings.
18. Know the major C string functions.

C Programming

19. Demonstrate proper use of `printf` and `scanf` functions.
20. Write a C program or function that performs a given task expressed in English.