**ECE 2036 Test 1 Topics**

Test 1 Wednesday – Open book, slides, notes, calculators, PCs and tablets allowed, but no Internet access or running C/C++ code examples on a PC

Basic C

Built-in C Data types: bool, char, int, float, double…

Declaring and initializing variables

C Control Structures: if, else, while, do, for, switch, break, function calls and return

C operators +, -, \*, /, --, ++, >>, <<, &, &&, |, ||, ^, %...

Type conversions

Preprocessor directives: #include, #define,…

C++ material from C++ How to Program Textbook Chapters 1-8

Simple Class: constructor, member functions and variables, public vs. private

I/O using cout, cin

Code reuse, Header files, Global and Local variables, variable scope rules

Standard Math library functions: exp, log, sin, sqrt, tan, rand…

Functions, function prototypes, passing and returning arguments

Recursion

Arrays: size, initialization, passing to function, multidimensional

Using a Template to generate functions that have different types

Using a vector from the STL

Pointers: declarations, initialization, dereferencing, arithmetic, arrays, strings, functions, sizeof operator

Material from Labs

Using mbed’s I/O C++ class APIs: DigitalIn, DigitalOut, AnalogIn, AnalogOut…

I/O using printf, fprintf, fopen, fclose