**Additional Topics for ECE 2036 Test II**

New material and topics from Chapters 9-16 has been covered since Test I. Chapter 16 was not covered in detail. Much of the material in these Chapters was covered in less detail in earlier examples. In addition, the two mbed labs were due after Test 1 and the test will have mbed related questions.

**Exceptions**

Try, catch, and throw

**Operator Overloading**

Use to setup new class operators (i.e, +\_\*/….)

Use with istream and ostream (i.e., cin,cout)

**Dynamic Memory Allocation**

new, delete

Use of new and delete in class constructors and destructors

**Inheritance**

Base class

Derived class

Abstract Class

**Polymorphism**

Defining and using Virtual Functions and Pure Virtual Functions

Use of pointers, references, and pass by value with virtual functions

**File I/O**

Reading and Writing Files

Sequential Access and Updates

Random Access

Binary Files

**C++ Strings**

Assignment and concatenation

Substrings

Comparing Strings

Finding Substrings

Conversion to C strings

**STL Library**

Basic containers

Common member functions for STL containers

Using Iterators with containers

**Linked list data structures**

Using pointers to setup a linked list

Advantages of a linked list

Doubly linked lists

Using C++ templates to set up lists

**Mbed API**

DigitalIn, DigitalOut, AnalogIn, AnalogOut, and PwmOut

Using pushbuttons, LEDs, the text LCD, and speaker