**ECE 1111: Engineering Computation I**

**Homework No. 14: Linear Algebra**

**Goal:** C++ allows you to build your own classes and define how these classes interact with each other. In this assignment, you will learn how to implement a matrix class and overload operators.

**Description:** Create a matrix class in C++ that allows you to:

* Define a matrix using a constructor with these arguments:

**MyMatrix foo(long nrows, long ncols, float\* data);**

* Add to matrices using:

**MyMatrix a(3, 3, data\_a);**

**MyMatrix b(3, 3, data\_b);**

**MyMatrix c = a + b;**

* Subtract and multiply two matrices using the same interface by overloading “-“ and “\*”.

If the operands are not of the same dimension, you should throw an error. Be sure to copy the data in data\_a to class internal data.

Demonstrate your code is fully debugged by creating a driver program that thoroughly tests your class.

Submit your well-commented and well-documented code by creating a directory using your last name – all lowercase – here:

/data/courses/ece\_1111/current/homework/hw\_14

Your program must compile with make. Your executable must be named “my\_prog.exe”. Your program does not need to accept any arguments. Make sure you print the results in a clear, easy-to-read format.