**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.

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

To submit this assignment, send me a compressed tar file (\*.tar.gz) that contains all the code necessary to compile, link and run your main program. This will presumably include a Makefile, a header file, an implementation file and a main program. The comments in your main program should include information on timing your program.

The filename your submission must have is lastname\_firstname\_hw14.tar.gz. It must be an attachment in your email. No other input format, such as zip or rar, will be accepted.