**12-659**

**SPECIAL TOPICS: MATLAB**

## Fall 2019

**Exercise 3**

**Due Wednesday November 6, 2019**

Copy the csv file, **exercise3.csv**, which is available from Canvas, into your default Matlab folder. It should appear in the file list on the left side of the command window. Just for yourself, double click on the name of the csv file. It should open in an Import Window. You won’t be able to show us that you did this, but this window is useful if you are importing lots of data for your project. Using the import window, you can preview the data, spot problems before you read the file, and then execute the import commands directly.

1. Use **csvread** to read the values in the csv file into a matrix, **M**.

2. Use Matlab functions to find the number of rows and columns in the matrix, **M**. Display and explain these values to the user.

3. Take the inverse of the matrix, **M**. Verify that your new matrix is the inverse. Display the original matrix, the inverse matrix and the verification to the user.

4. Use **csvwrite** to write the inverse matrix to a new csv file called **<yourandrewid>3inv.csv. (**Remember that the notation <yourvalue> means that you should remove the brackets and replace the text with your value. So my file name would be sfinger3inv.csv.)

5. *Without* using a **for** loop, take the dot product of the second row with the third row.

6. Round each number in the **M** matrix to the nearest integer, take its absolute value, and convert it to its ascii character. Display the matrix of characters. (Don’t worry if it looks funny.)

Put all the commands in your m-file. Include comments with your name, andrewid, course number and assignment number at the beginning of the file. Name your m-file with your andrewid and the assignment number before you upload it to Canvas. All this makes it easier for the grader; she has to download the files from Canvas to run them, and if they are all named **main.m**, it can get confusing. Since your code will generate the new csv file, you don’t have to include the csv file in the upload to Canvas.