

CIEG 675

Homework #6 Due **Wednesday April 15, 2009**

In a m-file do the following and verify it works by copy and pasting into the command window or running your m-file.

- 1) Load the data file called `regr.mat` from my web page. It contains two variables `u` and `c` (synthetic) that represent velocity and sediment concentration data respectively. There is some work that suggests the concentration should be related to the velocity squared. Do an analysis and tell me what you think. Also, determine the root-mean-square error between the data and the theorized linear fit.
- 2) The data contained in the file `fit.mat` (variables `x` and `y`) on my web page is thought to be well-suited to a cubic polynomial (`x,y`). Determine how well the data follows expectations using root mean square error and a plot.
- 3) Load the data file called `surface.mat` from my web page. It contains variables `x` (the cross-shore coordinate, `y`, the alongshore coordinate and `z`, the elevation) from a beach survey. Perform an interpolation to a uniform grid that encompasses all the data using **`griddata`**. Plot the results using `plot3` (in two lectures we will learn how to make surface maps).