ASSIGNMENT 2: STEPS IN KRIGING USING GEOEAS

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-..Install SURFER as instructed
- Install DOSBOX following the instructions in the course website
- Install the zipped directory **dosbox_c_drive** on the course website on your c: drive

Running GEOEAS

- Call GEOEAS while in directory C:\GEOEAS   >GEOEAS
- in GEOEAS initiate "PREVAR" to develop the pairs comparison file. (see page 4-5 of manual); in FILES command enter the file name "TOPLIME.DAT", accept the file name for the pair comparisons: "TOPLIME.PCF", execute the pairs comparison using "EXECUTE", QUIT to return to the main file
- initiate "VARIO"; in DATA, enter the file name "TOPLIME.PCF"; the variable is "top lime", then EXECUTE; on the new screen using "NEW LAGS", you need to choose the minimum distance, maximum distance and increment(for example 0, 4000, 500 but check the impact of different limits; EXECUTE; PLOT; Q to return to VARIO menu from the graph; choose a MODEL: enter the MODEL parameters for example "linear" using the space bar, set the nugget, sill and range; PLOT, QUIT (note that you will need to try different models; see manual pages 4-8 to 4-13; write down the data for the best model); return to the main menu
- in main screen choose KRIGE; EXECUTE and DATA to enter the file name "TOPLIME.DAT" and follow the instructions on page 4-15 of manual; for GRID, choose the following: X origin = 0.0, Y origin = -5000.0, X cell size = 500.0, Y cell size = 500.0, X # cells = 17, Y # cells = 25, angle = 0; for SEARCH parameters enter the search radius (it will to be about 6000 or larger), ellipse angle is 0.0and choose appropriate max and min in sector (for example, 10 and 6 but try different values) EXECUTE (note that instructions are on page 4-16 of manual)
- plot results in the fn.grd file using SURFER

Running Surfer
- Open surfer
- go to GRID.
- Select DATA
- enter data name eg "toplime.dat" in appropriate directory: c:\GEOEAS; note that GEOEAS will create a file toplime.grd - you should change the extension from .grd to .dat - you also need to delete all non-data lines from the file
- verify that X and Y are appropriate columns; for Z choose column C if you want estimates and column D if you want to plot standard deviations
- choose the interpolation method – inverse square is okay, check options
- revise extent and spacing in X and Y directions as appropriate; X should range from 0.0 to 8000. While Y should range from -5000. To 7000.
- OK will create estimates at locations: file will be named fn.grd.

- Open "MAP"
- Select load base map
- Import the file with extension of either .dxf or .bln,   OK
- On MAP, select CONTOUR
- Select the file….. fn.grd in the appropriate directory
- Adjust the labels, format etc to make the drawing look professional; there should be no digits to the right of decimals
- With the curser, draw a box around drawings, in MAP choose OVERLAY MAPS
- You can subsequently edit the figure to make sure that it looks professional
- You can add postings of the location of data points by selecting POST in MAP. For this, you must set up a file of X, Y and the Z value. Note that you can post just the location or the location and the observed value.   You must post the locations when trying to find point where another well would return the most information.

For Inverse Squares
- Use SURFER and appropriately edited file

For question 3
- Use Excel to prepare file; be sure that you have estimated values at same grid points.