<p align="center">**Computer Methods in Geology – Gly 430/530**</p>
<p align="center">Class Policy</p>
<p align="center">Dewey D. Sanderson</p>

Tests and Grade Scale

There will be three lecture tests for the course, the last of the three being the final exam. Tests are announced a week ahead of time to allow for adequate preparation. The lowest test score will be weighted 1/2 the weight of the two higher test scores. Grading and scaling will be on the 10 point scale: 90's-A, 80's-B, 70's-C, 60's-D and <60-F.

Calculation of Grades

Because the lecture and lab are part of the same course, the lab and lecture scores will be combined to give a final numerical grade. If the lecture grade is greater than the lab average, then the lecture will be weighted 75% and the lab 25%. If the lab grade is greater than the lecture average, then the lecture will be weighted 60% and the lab 40%. The lab grade will be based upon exercises (75%) and a lab test (25% each). Labs are graded on a basis of 10 points per exercise. The lab final will be on the last day of regular class meeting.

Lab

Lab exercises will analyze a wide range of data from various areas of geology utilizing Excel and Surfer as tools for the storage, manipulation, analysis and presentation of the results. Labs reports are to be prepared with WORD and/or EXCEL and SURFER.

Graduate Students

Graduate students will be required to do a project that will be counted 15% of the course grade. Completed graduated projects will be a written report and a PowerPoint presentation to the class.

Attendance

There is no attendance policy, but it is to your benefit not to be absent and it is your responsibility to find out what was covered and what may have been assigned. Lab exercises not turned in on-time will be deducted one-half point/day of tardiness. A lab exercise not turned in before it is returned to the rest of the class will not be graded and will receive an automatic 4 if turned in. An exercise not turned in will receive a "0".

COMPUTER METHODS IN GEOLOGY - Gly 430/530

Course objectives:
  1. Learn basic statistical methods used in geology
  2. Manipulate, represent and analyze data sets for geological significance.
  3. Have working knowledge of spreadsheet, statistical, graphical and contouring software.
  4. Have basic skills on how statistics and data analysis can help solve geological problems.

I) Introduction
    A. Introduction
    B. Data quality
    C. Handling data
    D. Types of geological data
    E. Types of analysis

II) Univariate Statistics
    A. Describing a sample
    B. Parameters of a distribution
    C. Probability
    D. Normal populations
    E. Other distributions
    F. Testing hypotheses
    G. t test
    H. The F Test
    J. Analysis of Variance
    K. The X^2 Test

III) Analysis of Sequential Geological Data
    A. Measurements in sequence
    B. Interpolation
    C. Least squares
    D. Smoothing/filtering
    E. Correlation methods
    F. Fourier analysis
    G. Markov series

IV) Spatial Distribution and Analysis of Data
    A. Introduction
    B. Testing of point distributions
    C. Contouring

Text: Statistics and Data Analysis in Geology, 3rd ed. by John C. Davis