Geophysics 5357/Geology 6315  Well Logging  
Spring 2009

Lecture: Monday, Wednesday 11:30-12:20, Room 302 Geological Sciences  
Lab: Wednesday 12:30-3:20, Room 302 Geological Sciences  
Instructor: Dr. Diane Doser, Geology 307, 747-5851, doser@geo.utep.edu  
Office hours (Dr. Doser): Monday, Wednesday 10:30-11:20

Text and Interpretation Charts: You will find these materials on-line at  
www.geo.utep.edu/pub/doser/schlumpubs The directory is composed of pdf files  
(scanned images) of all the charts and chapters of Schlumberger’s “Log Interpretation  
Principles/Applications” and “Log Interpretation Charts” publications.

Goals: To learn to perform lithostratigraphic correlations, recognize time markers, and  
recognize what logs imply about sedimentation. To perform simple quantitative analyses  
for net pay, deviation correction, porosity, water salinity, water saturation, mineralogy,  
invasion, and other analyses for hydrologic, environmental, petroleum and mineral  
studies.

Lecture topics:  
Physics of log measurements  
Physical properties of minerals  
Mixing laws for interpreting well logs  
Quantitative interpretations of well logs  
Simultaneous equation solutions  
Pitfalls  
Service company applications

Laboratory topics:  
Introduction to log headers  
Lithostratigraphic correlation  
Chronostratigraphic correlation  
Sedimentary structures  
Dipmeter interpretation  
Structural correlation between wells  
Minerals and tool responses  
Log-core comparison  
Porosity  
Rw,Sw calculations  
Hydrology/environmental/engineering applications  
Reduction of field data and use of tools in the field  
Computer applications

Grading:  
Two in class exams (February 23, March 30) 25%  
Homework (labs, presentations, readings) 50%
Final exam (Weds., May 13, 1-3:45 PM) 25%

Late policy:
Homework/projects will be due at lab time on due date. Homework may be turned in for partial credit after the due date, but before the corrected homework is handed back. No credit will be given after the corrected assignment has been handed back.

Doctoral students will be graded separately from MS students. On exams I expect doctoral students to answer questions in more depth and may ask different/additional questions. I will expect doctoral students to more thoroughly discuss and summarize assigned readings and provide more detailed and comprehensive laboratory reports.