

GEOL 4825 - Geophysical Well Log Analysis

Fall 2026 Syllabus, Section 01, CRN 43546,

Credit hours: 3

Instructor

Thomas Jordan

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Public Instructor Information

Instructor Title: Researcher and Part-Time Faculty

Instructor Professional Qualifications:

Ph.D., Geophysics, University at Buffalo, Buffalo, New York, 2003.

M.S., Geology, State University of New York at Fredonia, Fredonia, New York, 1986.

B.A., Geology, Alfred University, Alfred, New York, 1984.

Licensed Professional Geologist in 10 States

40 years of Industry Experience

Instructor Office Location: Moser 1050

Instructor Office Phone: 330.941.3616



Course Description

4825. Geophysical Well Log Analysis. An introduction to geophysical well logging, analysis, and interpretation applications in the oil and gas industry. Topics include well construction, drilling mud properties, and interpretation of gamma ray, SP, resistivity, sonic, neutron density, and cement bond logs. Restrictions: permission of instructor. Prereq.: GEOL 2620, GEOL 3704, PHYS 1502 or PHYS 2611. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Basic Well Log Analysis	Asquith, George and Daniel Krygowski	978-0891816676

Basic Well Log Analysis, Second Edition, AAPG Methods in Exploration Series No. 16, American Association of Petroleum Geologists, Tulsa, Oklahoma.

Note that deep discounts are available on AAPG publications when you become a student member.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Tue	8/25	Read and Compile Notes on Chapter 1	Introduction, Concepts, Terminology, Headers, Scales, and Tracks	
Tue	9/1	Review Chapter 2	The Spontaneous Potential Log & the Caliper Log. Methods for calculating formation pore water resistivity In Class SP Log Evaluation	
Tue	9/8	Review Chapter 3	Shale Volume from SP and GR Logs In Class Shale Volume Evaluation	SP Log Evaluation Due
Tue	9/15	Review Chapter 4	Acoustic Log Evaluation	Shale Volume Evaluation Due

Tue	9/22		Density, PE, Density Porosity, and Neutron Porosity Log Evaluation	Acoustic Log Evaluation Due
Tue	9/29	Review Chapter 5	Resistivity Log Evaluation	Porosity Log Evaluation Due
Tue	10/6	Review Chapter 7	Water Saturation	Resistivity Log Evaluation Due
Tue	10/13	Review Chapter 8	Petrophysical Analysis	Water Saturation Evaluation Due
Tue	10/20		Approach and Analysis of Stratigraphic Log Sections	
Tue	10/27		Ordovician Trenton LS Analysis	
Tue	11/3		Silurian ECOF Analysis	Trenton Section Analysis Due
Tue	11/10		Introduction to the Anadarko Basin Play Project	ECOF Section Analysis Due
Tue	11/17		Anadarko Basin Play Analysis	
Tue	11/24		Anadarko Basin Play Analysis	
Tue	12/1		Anadarko Basin Play Review & Wrap-up	
Tue	12/8		Anadarko Basin Play Presentations	

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.