PETE 3036 - Well Logging
Craft and Hawkins Department of Petroleum Engineering
Louisiana State University
Fall 2016

Prerequisites: PETE 2031 (Rock Properties), and either EE 2950 or PHYS 2102. **Catalog Description:** Qualitative and quantitative formation evaluation by means of electric, acoustic, and radioactive well logs (three credit hours).

Lecture: **EW 137**

Time: **Lectures: T-Th 1:30 - 2:50 PM**

Help Sessions (Not mandatory): will be announced

2427 Patrick Taylor Hall

Instructor: Dr. Dahi

Office: 139 Old Forestry Building

Email: a_dahi@lsu.edu

Office Hours: Wednesday 2:30 – 3:30, or at other times by appointment

Teaching Assistant: Mr. Klimenko
Office Hours: TBA (in PETE computer lab)
Students are not supposed to meet TA in graduate student office

Textbook

SPE textbook – Theory, Measurement and Interpretation of Well Logs by Zaki Bassiouni. The cost is approximately $ 90.00. ***SPE textbook - Openhole Log Analysis and Formation Evaluation, Second Edition by Richard M. Bateman, for SPE members $110***

Other References

Basic Well Logging Analysis, published by American Association of Petroleum Geologists.

PDF copies of the PowerPoint presentations will be posted on the Moodle of the course.

Objectives: Impart students with knowledge of conventional well log interpretation including:

- The identification of porous and permeable sands from the SP and Gamma Ray Logs
- The determination of porosity, lithology, and hydrocarbon type from sonic, density, and neutron logs
- An understanding of electrical resisitivity in reservoir rocks and its relationship to porosity and water saturation
- The ability to estimate water resistivity from water saturated sands and the SP log
- The estimation of water saturation

Topics:

1. Introduction to well logging
2. Gamma Ray Logging
3. Measurement Environment
4. Formation Imaging
5. Sonic Logs
6. Density and Neutron logs
7. Electrical Resistivity
8. Formation Water Resistivity and SP Logs
9. Lithology Determination
10. Gas Bearing Formations
11. Reconnaissance Techniques
12. Digitized Log Interpretation

General Information:

There will be homework assigned weekly and discussed, but not graded. There will be help sessions on Wednesday evenings to discuss the homework and ask other questions. There will be some pop quizzes based on the course materials during class time in a random order. In addition, there will be midterm test and a final exam.

Grade Calculation

Pop Quizzes	5%

	Homework	15%
Midterm Tests	50%	
	Final	30%

The ONLY calculator that will be allowed for use on PETE 4050 exams will be a *TI 36XPro calculator*. These can be purchased through Amazon, Co-Op Bookstore or many other vendors for less than $20. Make sure though that the one you purchase is a TI 36XPro.

Grading Policy

Grade	
A^+	**>98.00**
A	**92.00-97.99**
A^-	**90.00-91.99**
B^+	**88.00-89.99**
B	**82.00-87.99**
B^-	**80.00-81.99**
C^+	**78.00-79.99**
C	**72.00-77.99**
C^-	**70.00-71.99**
D^+	**68.00-69.99**
D	**62.00-67.99**
D^-	**60.00-61.99**
F	**<59.99**

Exam Schedule: Quizzes given during class time
Midterm Test:
Final as determined by the registrar. You may find it in the university catalogue.

All information are subject to change.