

CASPER COLLEGE COURSE SYLLABUS

EXTR2520 Introduction to Well Logging

Semester/Year: Fall 2015

Lecture Hours: 3

Lab Hours: 0

Credit Hours: 3

Class Time: 4:30-7:00pm

Days: M

Room: GW210

Instructor's Name: Ken Kreckel

Instructor's Contact

Office Phone: 268 3457

Email:

Information: 307 251 1370

kkreckel@caspercollege.edu

Email preferred.

Office Hours: 12:30-1:30pm PS115 MW [may conduct office hours in GW210]

Course Description: An introduction to the basics of modern well logging techniques in the oil and gas industry. The main focus will be the interpretation of various logs individually and in combination.

Statement of Prerequisites: None

Goal: Upon completion of this course, the student will

1. Be familiar with individual log types;
2. Demonstrate knowledge of how logs can be combined for a more accurate interpretation;
3. Demonstrate knowledge of the advantages and limitations of individual tools.
4. Be able to determine scientific interpretations of well log data, including the presence of hydrocarbons in a well

Outcomes: The student will:

1. Demonstrate knowledge of the basics of how logging tools are run;
2. Express comprehension of the basic interpretation of correlation logs like GR and SP;
3. Demonstrate knowledge of the basic interpretation of resistivity logs.
4. Demonstrate knowledge of the basic interpretation of porosity logs.
5. Demonstrate how to combine porosity, resistivity and correlation logs.
6. List the basic advantages and limitations of each tool type.
7. Be familiar with other logs and wireline methods
8. Be able to interpret a set of well logs to determine the productivity of an oil or gas well

Course Objectives: as above

Methodology: Lecture will present information necessary for the student to understand the reading assignments. In-class exercises, many utilizing Excel, will be extensively utilized to illustrate practical concepts.

Evaluation Criteria: There will be one midterm exam and one final project, which will comprise the majority of the grade. Quizzes and weekly work equal a portion of the course grade. However it is essential the student complete all assignments in order to perform well on the tests.

Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.

Required Text, Readings, and Materials: AAPG Methods 16 Basic Well Log Analysis [includes Excel based log analysis program]

Additional resource available in library: Johnson/Pile, Well Logging in Non-technical Language [Pennwell]

Resources from Schlumberger and others will be utilized, including various computer software packages including PETRA and Jason.

Class Policies: Last Date to Change to Audit Status or to Withdraw with a W Grade: as per Casper College policies (withdrawal deadline; see: “Admission and Registration – Schedule Changes” in the catalog)

Student Rights and Responsibilities: Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

Chain of Command: If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

Academic Dishonesty: (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

Official Means of Communication: Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

ADA Accommodations Policy: If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, bheuer@caspercollege.edu. The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

Calendar or schedule indicating course content:

The course Moodle page will serve as a constantly updated detailed course summary. Here's a brief summary:

- 1 Log Interpretation Reading log
data working with raster and digital
log data [PW2]
AAPG Ch1 PW1-3
- 2 SP and Gamma Ray
AAPG Ch1 & 2 PW5 & 6
- 3 Resistivity Logs
AAPG 5 PW5
- 4 Porosity Logs
AAPG Ch 4
- 5 Cross plots and working with
Digital logs
- 6 Water saturations & Mudlogging
PW4
- 7 Midterm
- 8 Log analysis of a development well
- 9 Digital Log interpretation
Echo Springs log
- 10 Case Histories & exercises
- 11 Case Histories & exercises
- 12 Case Histories & exercises
- 13 Unconventional and horizontal
- 14 Final project
- 15 Complete final project