

ENER 1510 - Foundations of Oil, Gas, and Well Plugging Operations

Fall 2026 Syllabus, Section 01, CRN 44181,

Credit hours: 3

Instructor

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Public Instructor Information

Instructor Title: Assistant Professor

Instructor Professional Qualifications: Ph.D, Petroleum Engineering, The University of Adelaide, 2016

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Course Description

1510. Foundations of Oil, Gas, and Well Plugging Operations. Overview of the historical development, terminology, and operational framework of the oil and gas industry. Topics include the history of drilling and production in the United States and the Appalachian Basin, oilfield terminology, well construction and production processes, orphaned and abandoned well problem, and plugging and abandonment operations. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	Oil and Gas Engineering for Non-Engineers	Quinta Nwanosike Warren	9780367607692
Optional	Oil & Gas Production in Nontechnical Language	Martin S. Raymond & William L. Leffler	9781593703868
Optional	Fundamentals of Oil & Gas Industry for Beginners	Samir Dalvi	9789352064199
Optional	The Oil & Gas Industry: A Nontechnical Guide	Joseph Hilyard	9781593702540
Optional	Nontechnical Guide to Petroleum Geology, Exploration, Drilling and Production	Hyne, Norman J.	9781593704933

No required textbook for this course. However, the books listed above are recommended.

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

Week of	Reading(s)	Proposed Topic	Due/To Prepare for Class
8/24	Introduction to Oil and Gas Industry		
8/31	Petroleum Geology and Hydrocarbon Exploration		
9/7	Introduction to Drilling	Quiz 1	
9/14	Drilling Rid Systems		
9/21	Casing and Cementing		
9/28	Introduction to Production	Quiz 2	
10/5	Surface Production Equipment		
10/12	Sampling and Inspection		



10/19	Well Logging and Well Testing	Quiz 3
10/26	Well Plugging and Abandonment	
11/2	Oilfield Economies	
11/9	Appalachian Basin Oil and Gas Resources	Quiz 4
11/16	Orphan Wells	
11/23	Oilfield Safety	
11/30	Summary and Overview	Quiz 5
12/7	Final Exam - online	

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.