



SYLLABUS

CATALOG DESCRIPTION

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Course presents basic principles of wellbore, wellhead, and Christmas tree design and operation for lease operators (aka MSOs, field technicians, pumpers). Instruction provides students with standard terminology to promote effective communication regarding maintenance issues and potential malfunctions. By understanding and correctly indentifying these designs and functions, students will be able to perform basic troubleshooting.

Prerequisites: None

Semester Offered: All

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Explain the basic purpose, function, and operation of the wellhead.
2. Identify the major components of the wellhead.
3. Identify and explain pressures at the wellhead and related safety features.
4. Identify potential wellhead malfunctions and know how to perform annual maintenance.
5. Effectively communicate with contractors regarding wellhead-related maintenance issues.
6. Disassemble and reassemble 2 wellhead models (real and virtual).
7. Correctly label wellhead schematic diagrams.

8. Understand proper valve installation for flow direction.
9. Keep wellhead valve handles installed and tight.
10. Become aware of different valve pressure ratings and capabilities.
11. Identify wellhead flanges and know type of seal ring required.
12. Explain wellhead, including Bradenhead, casing spool(s), tubing spool and tubing flange adapter.
13. Explain wellbore designs, including surface pipe, intermediate and production casing, and tubing installed.
14. Gain awareness of the importance of a good annual lubrication program.
15. Inspect Christmas tree valves for looseness and damage.
16. Visually differentiate between threaded & flanged wellheads.