



## **SYLLABUS**

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### **CATALOG DESCRIPTION**

Classroom and hands-on learning experience designed for newly-hired technicians, and specialized technicians moving to multi-skilled positions. Covers an introduction to the industry, the basics of oil and gas production operations from the reservoir to the sales point, and common terminology for equipment, maintenance, and troubleshooting. Promotes an understanding of roles, accountabilities, and expectations; enhance employees' ability to work safely and effectively.

Prerequisites: None

Semester Offered: On demand

#### **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 process of bringing oil and gas to the surface.
2. Effectively use the basic vocabulary of the oil and gas industry.
3. Identify surface equipment and describe its function.
4. Explain the principles of separation, compression, artificial lift, oil and gas measurement.
5. Proactively identify potential safety and environmental concerns on a well site.
6. Proactively identify potential opportunities for increased production.

7. Explain the basics of oil and gas production from the reservoir to the surface.
8. Identify wellhead and surface equipment; identify the relationships of the various pieces of surface equipment and downhole configuration as it related to production and revenue.
9. Explain principles of produced fluid separation; identify treater/separator types and components. and types of tanks; follow preventive maintenance/troubleshooting processes; understand regulatory considerations.
10. Explain principles of compression; identify compressor skid components; basic maintenance and troubleshooting processes.
11. Explain dehydration and water content of natural gas; the components of the dehydration process; guidelines for basic operations and troubleshooting; understand safety & environmental considerations.
12. Explain reasons for artificial lift; follow operating guidelines for differing types of artificial lift, down- hole pumps, plunger lift systems, gas lift, and several other types of artificial lift.
13. Apply general gas measurement principles; understand natural gas composition; identify meter components and auxiliary equipment; understand gas sampling, inspection of measurement equipment, and the significands of gas sales contracts.
14. Explain reasons for automation; identify types of automation equipment; differentiate between data and information; follow basic troubleshooting guidelines; understand economic value and difference between revenue and production.