



# Natural Gas Production and Processing

This course is part of [Petroleum Engineering with AI Applications Specialization](#)

 Instructor: [Subject Matter Expert](#)

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## 2 modules

Gain insight into a topic and learn the fundamentals.

4.5 ★

(30 reviews)

## Beginner level

Recommended experience ⓘ

4 hours to complete

## Flexible schedule

Learn at your own pace

## Skills you'll gain

Engineering Calculations Facility Management Chemical Engineering Safety Standards Oil and Gas Equipment Design Process Engineering  
Petroleum Industry Production Process Environmental Regulations Process Control Manufacturing and Production Materials science [View less skills](#)

## Details to know



### Shareable certificate

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### Assessments

2 assignments



### Taught in English

[6 languages available](#)

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## Build your subject-matter expertise

This course is part of the [Petroleum Engineering with AI Applications Specialization](#). When you enroll in this course, you'll also be enrolled in this Specialization.

- Learn new concepts from industry experts
- Gain a foundational understanding of a subject or tool
- Develop job-relevant skills with hands-on projects
- Earn a shareable career certificate

## There are 2 modules in this course

This course, "Natural Gas Production and Processing" gives a holistic understanding of the entire lifecycle of natural gas, from production to processing providing a comprehensive knowledge base and practical skills to excel in the natural gas industry.

In the "Natural Gas Production" module, the fundamentals of gas recovery and the intricacies of production and separation facilities are explored. Piping guidelines and safety are extensively discussed to ensure learners understand the best practices for designing, installing and maintaining gas pipelines. It also covers pipeline transportation of natural gas and gas flow systems, enabling learners to comprehend the principles and techniques involved.

Pressure vessels and accessories are vital part of natural gas production and their design, operation and safety considerations are extensively covered. It also covers gas hydrates and the use of methanol injection for temperature control and prevention of hydrate formation besides condensate stabilization systems and the importance of gas gathering and compression in efficient gas production operations.

The "Natural Gas Processing" module dives into the treatment and purification of natural gas. The module begins with an introduction to natural gas processing, covering the importance of removing impurities and liquids from raw natural gas to meet quality specifications. It explores gas dehydration methods, including adsorption and absorption techniques, as well as the widely used glycol dehydration process. It gives insights into the maintenance, regeneration, care and troubleshooting of glycol dehydration systems.

Various gas sweetening processes such as the iron sponge process, Sulfa-Treat, molecular sieve, zinc oxide, solvent, membrane and distillation processes which remove contaminants such as hydrogen sulfide and carbon dioxide to make the gas marketable are extensively covered.

Furthermore, it delves into liquid recovery processes and fractionation to understand how valuable liquid hydrocarbons are recovered from the natural gas stream through unit operations.

Target learners:

Students pursuing Diploma / UG / PG Programs in Chemical/ Petroleum/ Oil and Gas Engineering.

Faculties / Working Professionals in the above domain & other aspiring learners.

Prerequisite: Basic Chemical/ Petroleum/ Oil and Gas Engineering

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### Natural Gas Production


Module 1 • 2 hours to complete

[Module details ^](#)

"Natural Gas Production" is a module that provides learners with a comprehensive understanding of the processes and equipment involved in the recovery, processing and transportation of natural gas. This module begins with an introduction to gas recovery and processing, covering the basics of gas piping and its importance in the overall gas production and separation facility. Learners will explore the details of production and separation facilities for gas, including the equipment and processes involved. Piping guidelines and safety are extensively discussed to ensure learners understand the best practices for designing, installing and maintaining gas pipelines. The module also covers pipeline transportation of natural gas and gas flow systems, enabling learners to comprehend the principles and techniques involved. Pressure vessels and accessories are crucial part of natural gas production and their design, operation, and safety considerations are extensively covered. The module also addresses gas hydrates and the use of methanol injection for temperature control and prevention of

hydrate formation. Furthermore, learners will gain insights into condensate stabilization systems, gas cycling of condensate reservoirs and the importance of gas gathering and compression in efficient gas production operations.

#### What's included

 15 videos  1 assignment

Hide info about module content ^

 15 videos • Total 130 minutes

About the Specialization • 2 minutes

About the Course • 1 minute

Introduction to Gas Recovery and Processing • 6 minutes

Details of Production/Separation Facility for Gas • 10 minutes

Piping Guidelines and Safety - Part 1 • 11 minutes

Piping Guidelines and Safety - Part 2 • 12 minutes

Pipeline Transportation of Natural Gas and Gas Flow Systems • 11 minutes

Pressure Vessels and Accessories - Part 1 • 7 minutes

Pressure Vessels and Accessories - Part 2 • 6 minutes

Temperature Control • 12 minutes

Methanol and Glycol Injection • 6 minutes

Condensate Stabilization Systems - Part 1 • 9 minutes

Condensate Stabilization Systems - Part 2 • 8 minutes

Gas Cycling of Condensate Reservoirs • 10 minutes

Gas Gathering and Compression • 12 minutes

 1 assignment • Total 30 minutes

Assignment on Natural Gas Production • 30 minutes



## Natural Gas Processing

[Module details ^](#)

Module 2 • 2 hours to complete

The module on "Natural Gas Processing" provides students with a comprehensive understanding of the processes and methods involved in the treatment and purification of natural gas. It begins with an introduction to natural gas processing, covering the importance of removing impurities and liquids from raw natural gas to meet quality specifications. It explores gas dehydration methods, including adsorption and absorption techniques, as well as the widely used glycol dehydration process. It gives insights into the maintenance, regeneration, care, and troubleshooting of glycol dehydration systems. Gas sweetening is a critical step in natural gas processing and learners will understand various processes such as the iron sponge process, Sulfa-Treat, molecular sieve, zinc oxide, solvent, membrane and distillation processes which remove contaminants such as hydrogen sulfide and carbon dioxide to make the gas marketable. Furthermore, it delves into liquid recovery processes and fractionation to understand how valuable liquid hydrocarbons are recovered from the natural gas stream through unit operations.

#### What's included

 10 videos  1 assignment

Hide info about module content ^

 10 videos • Total 93 minutes

Introduction to Natural Gas Processing • 10 minutes

Removal of Liquids from Natural Gas • 8 minutes

Gas Dehydration - Adsorption • 7 minutes

Gas Dehydration - Absorption and Glycol Dehydration • 8 minutes

Glycol Maintenance, Regeneration, Care and Troubleshooting • 11 minutes

Iron Sponge Process • 9 minutes

Sulfa-treat, Molecular Sieve and Zinc-oxide Processes • 7 minutes

Solvent Processes • 9 minutes

Membrane and Distillation Processes • 9 minutes

Liquid Recovery Processes and Fractionation • 11 minutes

1 assignment • Total 30 minutes

Assignment on Natural Gas Processing • 30 minutes



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### Instructor

Instructor ratings ⓘ 3.0 ★ (7 ratings)



#### Subject Matter Expert

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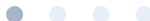
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★ 4.5 30 reviews



KS

★ 5 · Reviewed on Dec 28, 2024

Provides over view of the various process, equipment etc in simple comprehensive manner

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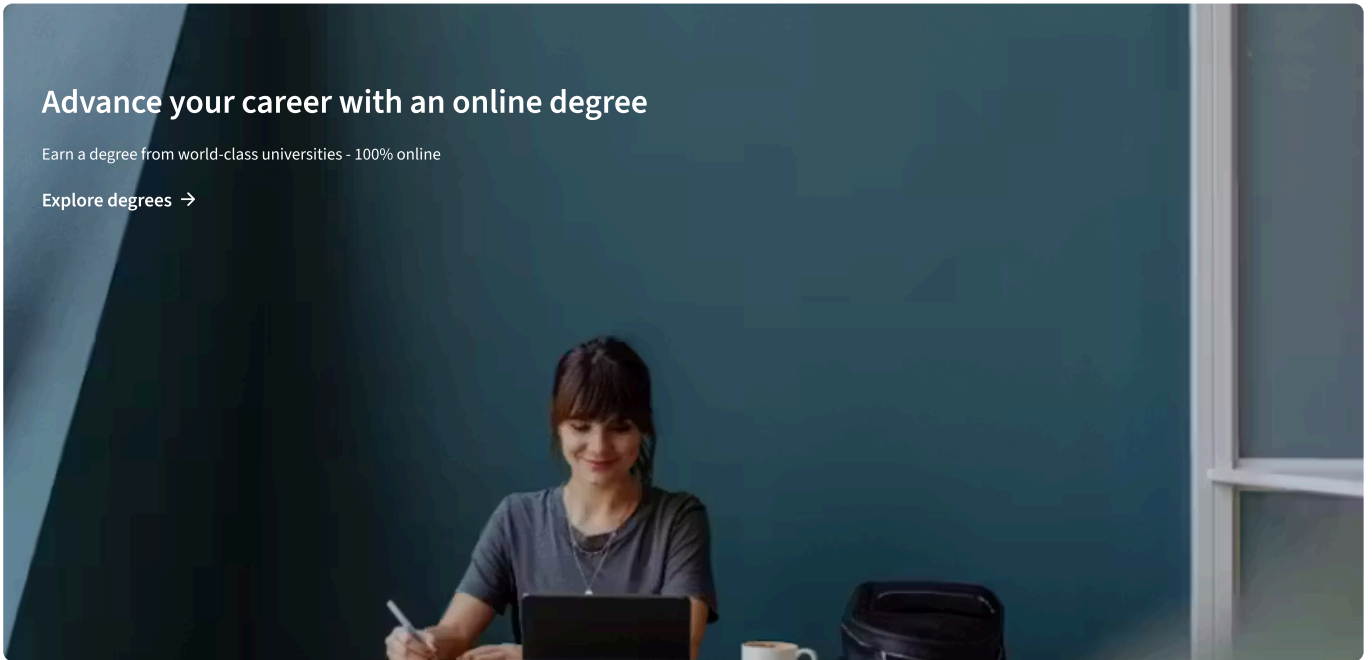
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## Frequently asked questions

^ When will I have access to the lectures and assignments?

To access the course materials, assignments and to earn a Certificate, you will need to purchase the Certificate experience when you enroll in a course. You can try a Free Trial instead, or apply for Financial Aid. The course may offer 'Full Course, No Certificate' instead. This option lets you see all course materials, submit required assessments, and get a final grade. This also means that you will not be able to purchase a Certificate experience.

^ What will I get if I subscribe to this Specialization?

When you enroll in the course, you get access to all of the courses in the Specialization, and you earn a certificate when you complete the work. Your electronic Certificate will be added to your Accomplishments page - from there, you can print your Certificate or add it to your LinkedIn profile.

^ Is financial aid available?

Yes. In select learning programs, you can apply for financial aid or a scholarship if you can't afford the enrollment fee. If fin aid or scholarship is available for your learning program selection, you'll find a link to apply on the description page.

More questions

Visit the learner help center

Financial aid available, [learn more](#)

Skills

Artificial Intelligence (AI)  
Cybersecurity  
Data Analytics  
Digital Marketing  
English Speaking  
Generative AI (GenAI)  
Microsoft Excel  
Microsoft Power BI  
Project Management  
Python

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How to Highlight Duplicates in Google Sheets  
How to Learn Artificial Intelligence  
Popular Cybersecurity Certifications  
Preparing for the PMP Certification  
Signs You Will Get the Job After an Interview  
What Is Artificial Intelligence?



