



**Petroleum, Oil & Gas**



**SCANDINAVIAN ACADEMY**  
Training and Development

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# Course: Gas Production Engineering GPO

Code	City	hotel	Start	End	price	Hours
570	Stockholm (Sweden)	Hotel Meeting Room	2024-04-08	2024-04-12	5450 €	25

## About this course

Learn the latest methods for calculating gas well performance from reservoir to sales. Reservoir performance covers the fundamentals of reservoir gas flow and details the best methods for testing wells, according to the time and money available. Reserve calculations and diagnostic testing from production data are covered. The importance of flow regime and non-darcy flow on test design and interpretation is emphasized for new wells and for the possibility of improving the performance of older wells. Also discussed are performances of tight formations, horizontal wells, fractured wells, and methods for estimating gas reserves. Participants will learn to calculate and determine the effect of each system component on total well performance, which permits optimum sizing of tubing, flowlines, separators, and compressors. Problem-solving sessions, using computers, will allow participants to evaluate field problems. Participants receive free software at the end of the course.

### Participants will learn how to:

- Apply proven techniques to field problems which increase profitability
- Calculate gas well performance, from the reservoir to the sales line
- Optimize gas well production
- Relate reservoir and well performance to time
- Predict when a well will die due to liquid loading

## Who should attend

production, reservoir, and facilities engineers and others involved in gas production, transportation, and storage including field supervisors

## Daily outline

### Day one

- **Gas properties**
  - Real gas behavior equations of state
  - Impurities, mixtures
  - Phase behavior dew point



- Retrograde behavior
- Flash calculations
- Classifying gas reservoirs

- **Reservoir performance**

- Gas well testing
- Flow after flow
- Isochronal
- Stabilized inflow performance
- Turbulence and skin effects
- Perforation effects
- Tight well analysis
- Horizontal wells
- Hydraulically fractured wells

## **Day two**

- Reserve calculations:
- p/z plots
- Energy plots
- Water influx
- Abnormal pressure effect
- Diagnostic testing based on production data
- Pressure loss
- Tubing
- Flowlines
- Chokes
- Safety valves
- Effects of liquids-liquid loading
- Liquid removal methods
- Multiphase flow correlations
- Erosional velocity
- Flow in pipes and restrictions

## **Day three**

- Compression:



- Types of compressors
- Compressor selection
- Reciprocating and centrifugal
- Effects of variables
- Capacity and horsepower
- Tubing and flowline size effects
- Perforating effects
- Relating deliverability to time
- Evaluating compressor installations
- Analyzing injection wells
- Total system analysis:

#### **Day four**

- Flow measuring:
- Orifice metering
- Design
- Accuracy
- Troubleshooting
- Other metering methods
- Reservoir types
- Wet gas
- Retrograde
- Reserve estimates
- Laboratory simulation
- Gas cycling
- Condensate reservoirs:

#### **Day five**

- Field operations problems: interpreting p/z plots; hydrate formation



**The Scandinavian Academy employs modern methods in training and skills development, enhancing the efficiency of human resource development. We follow these practices:**

- **Theoretical Lectures:**
  - We deliver knowledge through advanced presentations such as PowerPoint and visual materials, including videos and short films.
- **Scientific Assessment:**
  - We evaluate trainees skills before and after the course to ensure their progress.
- **Brainstorming and Interaction:**
  - We encourage active participation through brainstorming sessions and applying concepts through role play.
- **Practical Cases:**
  - We provide practical cases that align with the scientific content and the participants specific needs.
- **Examinations:**
  - Tests are conducted at the end of the program to assess knowledge retention.
- **Educational Materials:**
  - We provide both printed and digital scientific and practical materials to participants.
- **Attendance and Final Result Reports:**
  - We prepare detailed attendance reports for participants and offer a comprehensive program evaluation.
- **Professionals and Experts:**
  - The programs scientific content is prepared by the best professors and trainers in various fields.
- **Professional Completion Certificate:**
  - Participants receive a professional completion certificate issued by the Scandinavian Academy for Training and Development in the Kingdom of Sweden, with the option for international authentication.
- **Program Timings:**
  - Training programs are held from 10:00 AM to 2:00 PM and include buffet sessions for light meals during lectures.