TECHNICAL
EDUCATION
ACADEMY

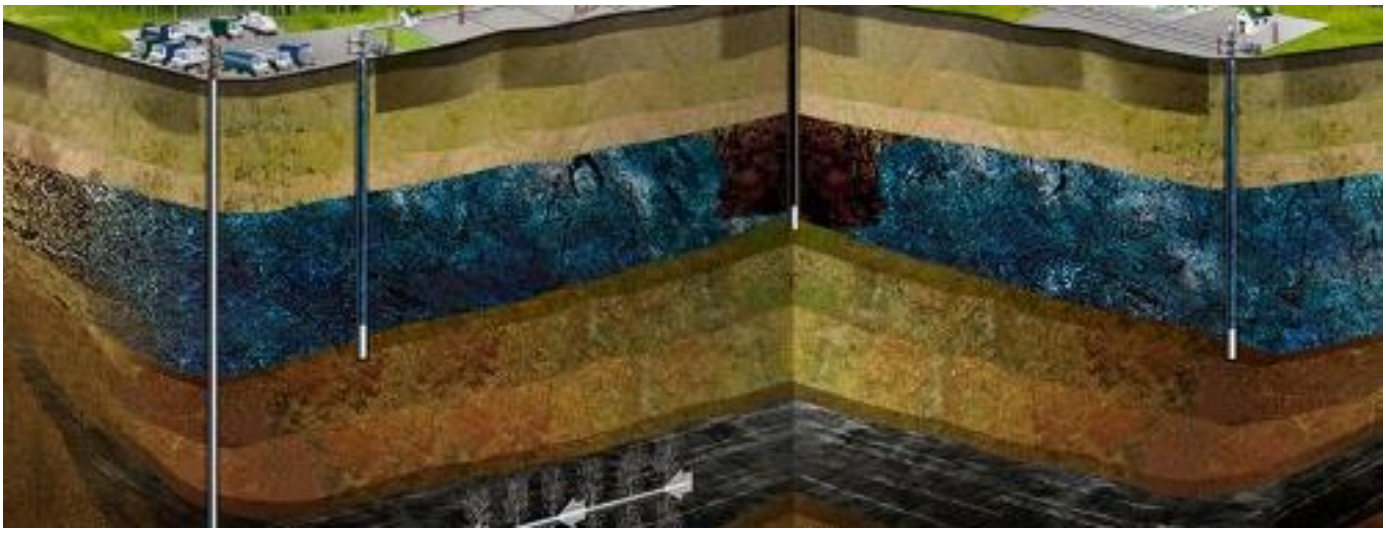
School of Engineering

COURSE PROGRAMME

000573

GEOP003 - Basic Geophysics

Are you interested in exploring the hidden treasures of the Earth?



Learn from the Best in the Business!

Course overview

Foundation level

Why take this course

Are you interested in exploring the hidden treasures of the Earth? Do you want to learn how to use the latest geophysical methods to uncover valuable resources such as oil, gas, and minerals? Then our Basic Geophysics training programme is perfect for you!

In this course, you will learn how to apply the principles of physics to the study of the Earth. You will discover how different rocks have distinct physical and chemical properties that can be measured using various geophysical methods. By combining these methods, you can reduce the uncertainty of subsurface models and increase your chances of finding valuable resources.

Our course covers both non-seismic and seismic data, including gravity, magnetics, electrical, electromagnetic, refraction, and reflection seismic. You will learn how to interpret and analyze data using Excel-based assignments that will enhance your understanding of the theories behind the methods.

Our experienced instructors will guide you through the different modules, including an overview of petroleum geology, risk assessment, and reserves evaluation. You will also learn about carbon capture and storage, carbonate and clastic reservoirs, and capillary pressure principles.

By the end of this course, you will be equipped with the knowledge and skills to apply geophysical methods in the exploration and evaluation of subsurface resources. Don't miss out on this opportunity to become an expert in Basic Geophysics!

Who it is for and how it helps

This Basic Geophysics training programme is designed for anyone who is interested in learning about the application of physics to the study of the Earth and the evaluation of subsurface resources. This course is suitable for geoscientists, engineers, and other professionals in the petroleum, mining, and environmental industries who want to improve their understanding of geophysical methods. It is also suitable for students who are pursuing a career in geology, geophysics, or related fields. Whether you are a beginner or an experienced professional, this course will enhance your knowledge and skills in Basic Geophysics.

What you will learn

- Understand the principles of geophysics and how to apply them to the study of the Earth and the evaluation of subsurface resources
- Identify different types of geophysical data and understand their respective strengths and limitations
- Apply various geophysical methods, including gravity, magnetics, electrical, electromagnetic, and reflection and refraction seismic, to the evaluation of subsurface resources
- Analyze and interpret geophysical data using Excel-based assignments and other practical exercises

Course overview — continued

- Understand the basics of reservoir interpretation, including amplitude interpretation for seismically thin beds, direct hydrocarbon indicators, seismic attributes, and 4D seismic
- Evaluate reserves using capillary pressure principles and other methods
- Understand the basics of carbon capture and storage
- Understand the importance of risk assessment in the exploration and evaluation of subsurface resources
- Develop a comprehensive understanding of petroleum geology, including traps, reservoirs, and seals

Curriculum

Modules 01–07

01 Introduction to Petroleum Geology

- Overview of petroleum geology
- Assessment of risk
- Sources of geological data
- Traps
- Reservoirs and seals
- The reservoir team

02 Clastic Reservoirs

- Clastic reservoirs

03 Carbonate Reservoirs

- Carbonate reservoirs

04 Capillary Pressure Principles and Reserves Evaluation

- Capillary pressure principles
- Reserves evaluation

05 Carbon Capture and Storage

- Carbon capture and storage

06 Introduction to Petroleum Geophysics

- Introduction to Petroleum Geophysics
- Types of information obtained from seismic data

07 Basics of Reflection Seismic Method

- Basics of the reflection seismic method
- The seismic trace, section, and volume
- The convolutional model – reflection coefficients, travel times, and wavelet
- Wave propagation – reflection, refraction, and attenuation

Curriculum

Modules 07–09 · Module 07 — continued

- Resolution and velocity

08 Basics of Interpretation

- 2D vs. 3D
- Well ties
- Interpretation procedure
- Depth conversion

09 Reservoir Interpretation

- Amplitude interpretation for seismically thin beds
- Direct Hydrocarbon Indicators
- Seismic Attributes
- 4D seismic

Joining the programme

Contact the Academy and quote course code 000573 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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