Global Horizon
TRAINING CENTER

Training Course:
Modelling & Managing Uncertainty in the Subsurface

27 - 31 July 2026
Madrid (Spain)

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Modelling & Managing Uncertainty in the Subsurface

Training Course code: SC236574 From: 27 - 31 July 2026 Venue: Madrid (Spain) - Training Course Fees: 6300 Euro

Introduction

The Modelling & Managing Uncertainty in the Subsurface training program is designed by Global Horizon Training Center to equip geoscientists, geomodellers, reservoir engineers, and subsurface professionals with the knowledge and practical skills required to identify, quantify, model, and effectively manage uncertainty throughout the subsurface evaluation and decision-making process. The course integrates geological, geophysical, petrophysical, and engineering data to develop robust uncertainty-aware subsurface models that support exploration, appraisal, field development, and production optimization.

Objectives

By the end of this program, participants will be able to:

- Understand the nature and sources of uncertainty in subsurface studies.
- Differentiate between uncertainty, variability, and risk in geological and reservoir models.
- Identify geological, geophysical, petrophysical, and dynamic uncertainties.
- Apply uncertainty management throughout the subsurface modelling workflow.
- Build multiple geological scenarios for uncertainty assessment.
- Integrate seismic interpretation with geomodelling under uncertainty.
- Perform sensitivity analyses to determine key uncertainty drivers.
- Utilize probabilistic approaches for reservoir characterization.
- Develop uncertainty-aware geomodels that support better business decisions.
- Apply risk-based decision-making techniques during exploration and field development.
- Communicate uncertainty effectively to multidisciplinary teams and management.

Course Methodology

This highly interactive program combines:

- Expert-led presentations
- Practical geomodelling case studies

- Real subsurface workflow demonstrations
- Group discussions
- Geological scenario-building workshops
- Seismic interpretation exercises
- Reservoir uncertainty evaluation
- Risk assessment exercises
- Integrated team-based problem solving
- Interactive Q&A sessions

Organizational Impact

Upon completion of this program, organizations will benefit from:

- More reliable subsurface models.
- Improved exploration and development decisions.
- Better management of geological uncertainty.
- Reduced project risks.
- Enhanced collaboration between geoscience and engineering disciplines.
- Increased confidence in reservoir forecasting.
- Improved reserve estimation accuracy.
- Better investment decision support.
- More efficient field development planning.
- Stronger integration between seismic interpretation and geological modelling.

Target Audience

This program is designed for:

- Geoscientists
- Geomodellers
- Seismic Interpreters

- Reservoir Geologists
- Petroleum Geologists
- Reservoir Engineers
- Petrophysicists
- Exploration Geophysicists
- Field Development Engineers
- Asset Team Members
- Subsurface Managers
- Technical Specialists involved in exploration and production projects

Outlines

Day 1: Fundamentals of Subsurface Uncertainty

- Introduction to uncertainty in subsurface studies
- Types and sources of uncertainty
- Geological, geophysical, and petrophysical uncertainties
- Data quality and uncertainty assessment
- Risk versus uncertainty in decision-making
- Building an uncertainty management framework
- Industry standards and best practices

Day 2: Geological and Geophysical Modelling Under Uncertainty

- Structural modelling and fault uncertainty
- Seismic interpretation uncertainty
- Stratigraphic and facies modelling
- Property modelling and spatial variability
- Deterministic versus probabilistic modelling approaches
- Integrating geological and geophysical data

- Developing alternative geological scenarios

Day 3: Quantifying and Analysing Uncertainty

- Probabilistic modelling techniques
- Sensitivity analysis methods
- Stochastic simulation and multiple realizations
- Uncertainty in reservoir properties
- Volumetric uncertainty assessment
- Model calibration and validation
- Quantifying uncertainty for decision support

Day 4: Managing Uncertainty in Reservoir Development

- Reservoir characterization under uncertainty
- Risk assessment and mitigation strategies
- Decision analysis and scenario evaluation
- Uncertainty in field development planning
- Well placement and production forecasting
- Integrated subsurface workflows
- Communicating uncertainty to stakeholders

Day 5: Advanced Applications and Industry Best Practices

- Managing uncertainty throughout the asset lifecycle
- Updating models with new data
- Digital technologies for uncertainty management
- Case studies in exploration and reservoir modelling
- Lessons learned from industry projects
- Best practices for integrated uncertainty management
- Practical workshop and action planning

- Course review and discussion

Registration form on the Training Course: Modelling & Managing Uncertainty in the Subsurface

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
City / Country: .....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
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Payment Method

☐ Please find enclosed a cheque made payable to Global Horizon

☐ Please invoice me

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Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.