

COURSE OVERVIEW DE0431
Fractured Environments in Hydrocarbon Exploration

Course Title

Fractured Environments in Hydrocarbon Exploration

Course Date/Venue

Session 1: January 06-10, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
 Session 2: July 27-31, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



Course Reference

DE0431

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Date/Venue



This practical and highly-interactive course includes real-life case studies where participants will be engaged in a series of interactive small groups and class workshop.

This course is designed to provide participants with a detailed and up-to-date overview of Introduction to Hydrocarbon Exploration and Production. It covers the economic and strategic importance of oil and gas industry; the overview of the upstream, midstream and downstream sectors and the fundamental concepts in petroleum geology; the types of rock, sedimentary basins and processes of formation of oil and gas reservoirs; the seismic methods for hydrocarbon exploration; the seismic data collection, processing and interpretation; and the drilling processes, well logging and techniques and tools used to evaluate the geological formations.



Further, the course will also discuss the risks and uncertainties associated with hydrocarbon exploration; the geological risks, technical challenges and economic considerations; the reservoir engineering concepts including reservoir properties, fluid dynamics and the mechanisms of hydrocarbon storage and flow; the production systems and equipment used in hydrocarbon production; the wellheads, gathering systems and separation facilities; the basic principles and applications of artificial lift technologies; and the rod pumps, gas lift and electric submersible pumps to enhance oil and gas production.



During this interactive course, participants will learn the oil recovery (EOR) methods and techniques designed to increase the amount of hydrocarbons that can be extracted from an oil field; the thermal recovery, gas injection and chemical methods; the process of field development planning and the reservoir modeling, production forecasting and economic evaluation; the environmental impact of hydrocarbon production and the safety practices and regulations in place to mitigate risks; the unconventional resources, digital technologies in exploration and production; the project management principles and practices specific to the exploration and production sector; the global oil and gas markets including supply and demand dynamics, price mechanisms and geopolitical factors affecting the industry; the future trends and challenges in hydrocarbon exploration and production; and the impact of regulatory changes, technological advancements and environmental considerations.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a comprehensive knowledge on hydrocarbon exploration and production
- Discuss oil and gas industry, including its economic and strategic importance globally and an overview of the upstream, midstream and downstream sectors
- Explain the fundamental concepts in petroleum geology including types of rock, sedimentary basins and the processes of formation of oil and gas reservoirs
- Employ seismic methods for hydrocarbon exploration covering seismic data collection, processing and interpretation
- Apply drilling processes, well logging and techniques and tools used to evaluate the geological formations
- Identify risks and uncertainties associated with hydrocarbon exploration including geological risks, technical challenges and economic considerations
- Explain reservoir engineering concepts including reservoir properties, fluid dynamics and the mechanisms of hydrocarbon storage and flow
- Recognize production systems and equipment used in hydrocarbon production including wellheads, gathering systems and separation facilities
- Discuss the basic principles and applications of artificial lift technologies including rod pumps, gas lift and electric submersible pumps to enhance oil and gas production
- Enhance oil recovery (EOR) methods and techniques designed to increase the amount of hydrocarbons that can be extracted from an oil field including thermal recovery, gas injection and chemical methods
- Illustrate the process of field development planning including reservoir modeling, production forecasting and economic evaluation
- Discuss the environmental impact of hydrocarbon production and the safety practices and regulations in place to mitigate risks
- Identify unconventional resources, digital technologies in exploration and production and the project management principles and practices specific to the exploration and production sector

- Recognize global oil and gas markets including supply and demand dynamics, price mechanisms and geopolitical factors affecting the industry
- Discuss the future trends and challenges in hydrocarbon exploration and production including the impact of regulatory changes, technological advancements and environmental considerations

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of hydrocarbon exploration and production for production engineers, managers and other technical staff.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US\$ 8,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation


Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours


Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- 

British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council for Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- 

The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology’s courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant’s involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant’s CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Konstantin Zorbalas, MSc, BSc, is a Senior Petroleum Engineer & Well Completions Specialist with over 30 years of offshore and onshore experience in the Oil & Gas, Refinery & Petrochemical industries. His wide expertise includes Workovers & Completions, Petroleum Risk & Decision Analysis, Acidizing Application in Sandstone & Carbonate, Well Testing Analysis, Stimulation Operations, Reserves Evaluation, Reservoir Fluid Properties, Reservoir Engineering & Simulation Studies, Reservoir Monitoring, Artificial Lift Design, Gas Operations, Workover/Remedial Operations & Heavy Oil Technology, Applied Water Technology, Oil & Gas Production, X-mas Tree & Wellhead Operations & Testing, Artificial Lift Systems (Gas Lift, ESP, and Rod Pumping), Well Cementing, Production Optimization, Production Operations, Well Completion Design, Sand Control, PLT Correlation, Slickline Operations, Acid Stimulation, Well testing, Production Logging, Project Evaluation & Economic Analysis. Further, he is actively involved in **Project Management** with special emphasis in production technology and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning. He is currently the **Senior Petroleum Engineer & Consultant of National Oil Company** wherein he is involved in the mega-mature fields in the Arabian Gulf, predominantly carbonate reservoirs; designing the acid stimulation treatments with post-drilling rigless operations; utilizing CT with tractors and DTS systems; and he is responsible for gas production and preparing for reservoir engineering and simulation studies, well testing activities, field and reservoir monitoring, production logging and optimization and well completion design.

During his career life, Mr. Zorbalas worked as a **Senior Production Engineer, Well Completion Specialist, Production Manager, Project Manager, Technical Manager, Technical Supervisor & Contracts Manager, Production Engineer, Production Supervisor, Production Technologist, Technical Specialist, Business Development Analyst, Field Production Engineer and Field Engineer.** He worked for many world-class oil/gas companies such as **ZADCO, ADMA-OPCO, Oilfield International Ltd, Burlington Resources** (later acquired by **Conoco Phillips**), **MOBIL E&P, Saudi Aramco, Pluspetrol E&P SA, Wintershall, Taylor Energy, Schlumberger, Rowan Drilling and Yukos EP** where he was in-charge of the **design and technical analysis** of a gas plant with capacity **1.8 billion m³/yr gas**. His achievements include **boosting oil production 17.2% per year** since 1999 using **ESP and Gas Lift systems**.

Mr. Zorbalas has **Master's and Bachelor's** degree in **Petroleum Engineering** from the **Mississippi State University, USA**. Further, he is an **SPE Certified Petroleum Engineer, Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**, an active member of the **Society of Petroleum Engineers (SPE)** and has numerous scientific and technical publications and delivered innumerable training courses, seminars and workshops worldwide.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Petroleum Industry: Oil & Gas Industry, including its Economic & Strategic Importance Globally & An Overview of the Upstream, Midstream & Downstream Sectors
0930 – 0945	Break
0945 – 1100	Petroleum Geology: Fundamental Concepts in Petroleum Geology including Types of Rock, Sedimentary Basins & the Processes of Formation of Oil & Gas Reservoirs
1100 – 1200	Seismic Exploration Techniques: Seismic Methods for Hydrocarbon Exploration, Covering Principles of Seismic Data Collection, Processing & Interpretation
1200 – 1215	Break
1215 – 1420	Exploratory Drilling: Exploratory Drilling Processes, Including Site Selection, Drilling Rigs & the Drilling Process from Planning to Well Completion
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	Well Logging & Evaluation: Basics of Well Logging Techniques & Tools Used to Evaluate the Geological Formations & Determine the Presence of Hydrocarbons
0930 – 0945	Break
0945 – 1100	Risk & Uncertainty in Exploration: Understanding the Risks & Uncertainties Associated with Hydrocarbon Exploration including Geological Risks, Technical Challenges & Economic Considerations
1100 – 1200	Reservoir Engineering Fundamentals: Introduction to Reservoir Engineering Concepts including Reservoir Properties, Fluid Dynamics & the Mechanisms of Hydrocarbon Storage & Flow
1200 – 1215	Break
1215 – 1420	Production Systems & Operations: Production Systems & Equipment Used in Hydrocarbon Production including Wellheads, Gathering Systems & Separation Facilities
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Artificial Lift Systems: Basic Principles & Applications of Artificial Lift Technologies including Rod Pumps, Gas Lift & Electric Submersible Pumps to Enhance Oil & Gas Production
0930 – 0945	Break
0945 – 1100	Enhanced Oil Recovery (EOR) Methods: Introduction to EOR Techniques Designed to Increase the Amount of Hydrocarbons that can be Extracted from an Oil Field including Thermal Recovery, Gas Injection & Chemical Methods

1100 - 1200	Field Development Planning: The Process of Field Development Planning including Reservoir Modeling, Production Forecasting & Economic Evaluation
1200 - 1215	Break
1215 - 1420	Environmental & Safety Considerations in Production: Discussion on the Environmental Impact of Hydrocarbon Production & the Safety Practices & Regulations in Place to Mitigate Risks
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 4

0730 - 0830	Environmental & Safety Considerations in Production: Discussion on the Environmental Impact of Hydrocarbon Production & the Safety Practices & Regulations in Place to Mitigate Risks (Cont'd)
0930 - 0945	Break
0945 - 1100	Unconventional Resources: Unconventional Resources such as Shale Gas, Tight Oil & Oil Sands & the Technologies Used for their Exploration & Development
1100 - 1200	Digital Technologies in Exploration & Production: Overview of How Digital Technologies including Data Analytics, Machine Learning & Digital Twins, Are Transforming Exploration & Production Operations
1200 - 1215	Break
1215 - 1420	Sustainability & the Energy Transition: Discussion on the Petroleum Industry's Role in the Energy Transition including Carbon Capture & Storage (CCS) Technologies & Renewable Energy Integration
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 5

0730 - 0930	Project Management in Oil & Gas: Project Management Principles & Practices Specific to the Exploration & Production Sector including Cost Control, Risk Management & Stakeholder Engagement
0930 - 0945	Break
0945 - 1045	Project Management in Oil & Gas: Project Management Principles & Practices Specific to the Exploration & Production Sector including Cost Control, Risk Management & Stakeholder Engagement (Cont'd)
1045 - 1200	Global Oil & Gas Markets: Overview of the Global Oil & Gas Markets, Including Supply & Demand Dynamics, Price Mechanisms & Geopolitical Factors Affecting the Industry
1200 - 1215	Break
1215 - 1345	Future Trends & Challenges in Hydrocarbon Exploration & Production: Future Trends, Challenges & Opportunities in the Industry including the Impact of Regulatory Changes, Technological Advancements & Environmental Considerations
1345 - 1400	Course Conclusion
1400 - 1415	POST-TEST
1415 - 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org