

COURSE OVERVIEW DE0390
Unconventional Resource Development

Course Title

Unconventional Resource Development

Course Date/Venue

February 23-27, 2025/Azure or Olivine Meeting Room, Fairmont Nile City, Cairo, Egypt

Course Reference

DE0390

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



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



This course is designed to provide participants with a detailed and up-to-date overview of unconventional resources and reserve evaluation. It covers the important definitions and the differences between conventional and unconventional hydrocarbon resources; the unconventional hydrocarbon resources and global unconventional resources; the petroleum resources definitions, classifications and categorization guidelines; and the reserves and resources including the geological characteristics of unconventional hydrocarbon resource.



Further, this course will also discuss the hydrocarbon source rock and unconventional hydrocarbon source rocks assessment; the wireline logs for TOC measurement and hydrocarbon reservoir rock characteristics; the unconventional resources estimation and shale gas types; the characteristics of shale gas source rock; the classification of shale according to mechanical properties; and the characteristics of shale gas reservoir, micro-fractures, exploration and development of shale gas.

During this interactive course, participants will learn the coalbed methane; how hydrocarbon can be generated from coal; the geologic characteristics of coalbed reservoirs and the global outlook of coalbed methane reserves; the tight-sandstone oil and gas including the differences between conventional and tight sandstones; the geological characteristics of tight sandstone; the exploration potentials of tight-sandstone gas; the natural gas hydrate and its concept; the structure, formation and occurrence of natural gas hydrate; the natural gas hydrate stability zone; the gas hydrate delineation from seismic data; and the global potential outlook of the natural gas hydrate.

Course Objectives

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

- Apply and gain an in-depth knowledge on unconventional resource and reserve evaluation
- Discuss the important definitions and the differences between conventional and unconventional hydrocarbon resources
- Classify unconventional hydrocarbon resources and global unconventional resources
- Interpret petroleum resources definitions, classifications and categorization guidelines
- Identify reserves and resources including the geological characteristics of unconventional hydrocarbon resource
- Characterize hydrocarbon source rock and assess unconventional hydrocarbon source rocks
- Apply wireline logs for TOC measurement and describe hydrocarbon reservoir rock characteristics
- Carryout unconventional resources estimation and identify shale gas types
- Recognize characteristics of shale gas source rock and classify shale according to mechanical properties
- Identify the characteristics of shale gas reservoir, micro-fractures and exploration and development of shale gas
- Discuss coalbed methane, how hydrocarbon can be generated from coal, geologic characteristics of coalbed reservoirs and the global outlook of coalbed methane reserves
- Determine tight-sandstone oil and gas including the differences between conventional and tight sandstones and the geological characteristics of tight sandstone
- Identify exploration potentials of tight-sandstone gas and discuss natural gas hydrate and its concept
- Illustrate the structure, formation and occurrence of natural gas hydrate
- Describe natural gas hydrate stability zone, gas hydrate delineation from seismic data and global potential outlook of the natural gas hydrate

Who Should Attend


This course provides a basic overview of all significant aspects and considerations of unconventional resource and reserve evaluation for reservoir engineers and geoscientists working in integrated teams in unconventional assessments. managerial staff requiring an understanding of unconventional reservoir reserve and resource evaluation standards will also benefit.

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: -

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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.

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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.

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:



Dr. Hesham Abdou, PhD, MSc, BSc, is a Senior Drilling & Petroleum Engineer with over 35 years of integrated industrial and academic experience as a University Professor. His specialization widely covers in the areas of **Drilling & Completion Technology, Directional Drilling, Horizontal & Sidetracking, Drilling Operation Management, Drilling & Production Equipment, ERD Drilling & Stuck Pipe Prevention, Natural & Artificial Flow Well Completion, Well Testing Procedures & Evaluation, Well Performance, Coiled Tubing Technology, Oil Recovery Methods Enhancement, Well Integrity Management, Well Casing & Cementing, Acid Gas Removal, Heavy Oil Production & Treatment Techniques, Crude Oil Testing & Water Analysis, Crude Oil & Water Sampling Procedures, Equipment Handling Procedures, Crude & Vacuum Process Technology, Gas Conditioning & Processing, Cooling Towers Operation & Troubleshooting, Sucker Rod Pumping, ESP & Gas Lift, PCP & Jet Pump, Pigging Operations, Electric Submersible Pumps (ESP), Progressive Cavity Pumps (PCP), Water Flooding, Water Lift Pumps Troubleshooting, Water System Design & Installation, Water Networks Design Procedures, Water Pumping Process, Pipelines, Pumps, Turbines, Heat Exchangers, Separators, Heaters, Compressors, Storage Tanks, Valves Selection, Compressors, Tank & Tank Farms Operations & Performance, Oil & Gas Transportation, Oil & Gas Production Strategies, Artificial Lift Methods, Piping & Pumping Operations, Oil & Water Source Wells Restoration, Pump Performance Monitoring, Rotor Bearing Modelling, Hydraulic Repairs & Cylinders, Root Cause Analysis, Vibration & Condition Monitoring, Piping Stress Analysis, Amine Gas Sweetening & Sulfur Recovery, Heat & Mass Transfer and Fluid Mechanics.**

During his career life, Dr. Hesham held significant positions and dedication as the **General Manager, Petroleum Engineering Assistant General Manager, Workover Assistant General Manager, Workover Department Manager, Artificial Section Head, Oil & Gas Production Engineer and Senior Instructor/Lecturer** from various companies and universities such as the Cairo University, Helwan University, British University in Egypt, Banha University and Agiba Petroleum Company.

Dr. Hesham has a **PhD and Master degree in Mechanical Power Engineering** and a **Bachelor degree in Petroleum Engineering.** Further, he is a **Certified Instructor/Trainer** and a **Peer Reviewer.** Dr. Hesham is a member of Egyptian Engineering Syndicate and the Society of Petroleum Engineering. Moreover, he has published technical papers and journals and has delivered numerous trainings, workshops, courses, seminars and conferences internationally.

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\$ 8,500 per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), 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 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: Sunday, 23rd of February 2025

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0900	<i>Introduction to Unconventional Resource & Reserve Evaluation</i>
0900 – 0930	<i>Important Definitions</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Differences Between Conventional & Unconventional Hydrocarbon Resources</i>
1030 – 1100	<i>Classification of the Unconventional Hydrocarbon Resources</i>
1100 – 1130	<i>Outlook on Global Unconventional Resources</i>
1130 – 1230	<i>Petroleum Resources Definitions, Classification & Categorization Guidelines</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Reserves & Resources</i>
1330 – 1420	<i>Geological Characteristics of Unconventional Hydrocarbon Resources</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day One</i>

Day 2: Monday, 24th of February 2025

0730 – 0830	<i>Hydrocarbon Source Rock Characteristics</i>
0830 – 0930	<i>Assessment of Unconventional Hydrocarbon Source Rocks</i>

0930 – 0945	<i>Break</i>
0945 – 1100	<i>Wireline Logs for TOC Measurement</i>
1100 – 1130	<i>Unconventional Hydrocarbon Reservoir Rock Characteristics</i>
1130 – 1230	<i>Unconventional Resources Estimation</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Shale Gas</i>
1330 – 1420	<i>Shale Types</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Two</i>

Day 3: Tuesday, 25th of February 2025

0730 – 0830	<i>Characteristics of Shale Gas Source Rock</i>
0830 – 0930	<i>Classification of Shale According to Mechanical Properties</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Characteristics of Shale Gas Reservoir</i>
1100 – 1130	<i>Micro-fractures</i>
1130 – 1230	<i>Exploration & Development of Shale Gas</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Coalbed Methan (CBM)</i>
1330 – 1420	<i>How Hydrocarbon can be Generated from Coal?</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Three</i>

Day 4: Wednesday, 26th of February 2025

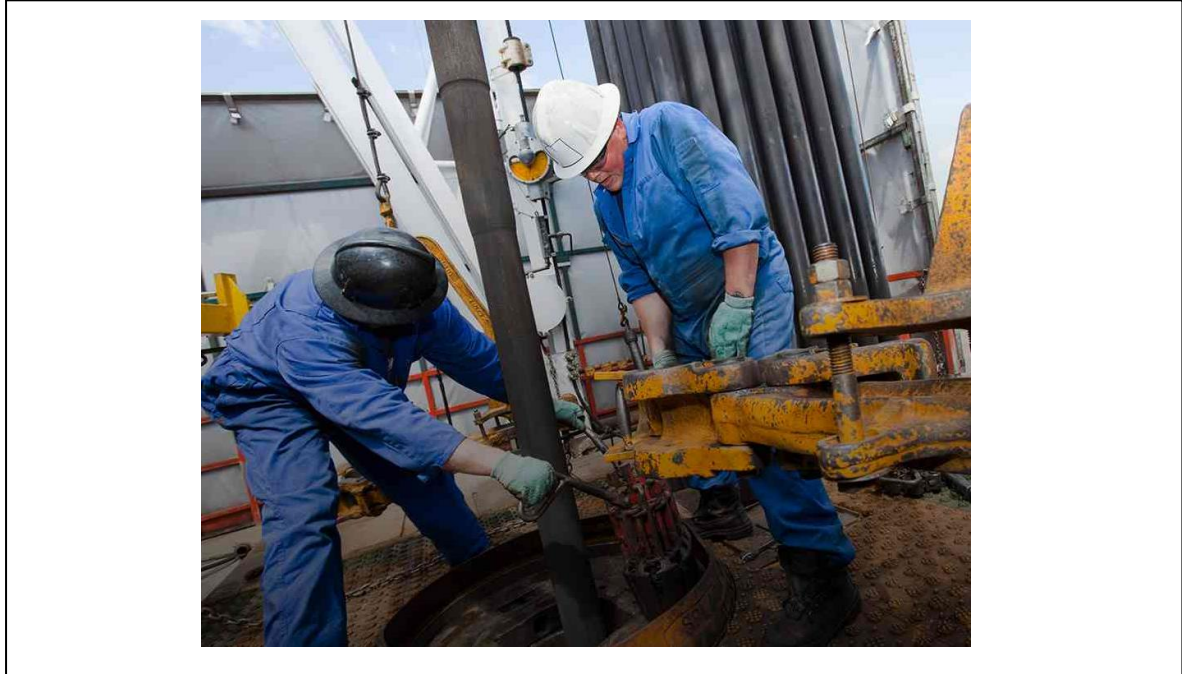
0730 – 0830	<i>Geologic Characteristics of Coalbed Reservoirs</i>
0830 – 0930	<i>Global Outlook of Coalbed Methane Reserves</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Tight-Sandstone Oil & Gas</i>
1100 – 1130	<i>Differences Between Conventional & Tight Sandstones</i>
1130 – 1230	<i>Geological Characteristics of Tight Sandstone</i>
1230 – 1330	<i>Exploration Potentials of Tight-Sandstone Gas</i>
1330 – 1420	<i>Natural Gas Hydrate</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Four</i>

Day 5: Thursday, 27th of February 2025

0830 – 0900	<i>Concept of Natural Gas Hydrate</i>
0900 – 0930	<i>Structure of Natural Gas Hydrate</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Formation & Occurrence of Natural Gas Hydrate</i>
1030 – 1100	<i>Natural Gas Hydrate Stability Zone</i>
1100 – 1130	<i>Definition</i>
1130 – 1230	<i>Gas Hydrate Delineation from Seismic Data</i>
1230 – 1245	<i>Break</i>
1245 – 1345	<i>Global Potential Outlook of the Natural Gas Hydrate</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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