



COURSE OVERVIEW DE0638
Advanced Geology

Course Title

Advanced Geology

Course Date/Venue

September 08-12, 2024/Boardroom, Warwick Hotel Doha, Doha, Qatar

Course Reference

DE0638

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



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 workshops.

This course is designed to provide participants with an advanced and up-to-date overview of geology. It covers the geology and earth science; the rock types and cycling comprising of igneous rocks/volcanic and volcanism, metamorphic rocks, sedimentary rocks/sedimentary process and rock cycling; the basic rocks and fluid properties, structural geology, primary structures and stresses /strains and their relations to rock deformation; the faults, fractures, folds and unconformities of secondary structures; the petroleum and petroleum system process and the classification of petroleum; the petroleum migration, petroleum accumulation and petroleum timing; and the petroleum system elements covering petroleum source rocks, petroleum cap rocks and trapping mechanism.



During this interactive course, participants will learn the petroleum reservoir rocks, reservoir properties and reservoir fluids; the exploration techniques for petroleum; the geophysical methods, geochemical methods, subsurface methods and exploration application; the drilling methods and techniques, well casing and cementing, well completion and stimulation, fracking and oil refinery; monitoring a well while drilling; the mud logging, lag time calculation, sample collection and preparation; and the ditch sample evaluation, hydrocarbon and gas shows evaluation, wireline operations and logging while drilling operations.





Course Objectives

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

- Apply and gain an advanced knowledge on geology
- Discuss geology and earth science including rock types and cycling comprising of igneous rocks/volcanic and volcanism, metamorphic rocks, sedimentary rocks/sedimentary process and rock cycling
- Identify basic rocks and fluid properties, structural geology, primary structures and stresses /strains and their relations to rock deformation
- Discuss the faults, fractures, folds and unconformities of secondary structures
- Carryout petroleum and petroleum system process, classification of petroleum and petroleum migration, petroleum accumulation and petroleum timing
- Recognize petroleum system elements covering petroleum source rocks, petroleum cap rocks and trapping mechanism
- Discuss petroleum reservoir rocks, reservoir properties and reservoir fluids
- Apply exploration techniques for petroleum including geophysical methods, geochemical methods, subsurface methods and exploration application
- Employ drilling methods and techniques, well casing and cementing, well completion and stimulation, fracking and oil refinery
- Monitor a well while drilling and apply mud logging, lag time calculation, sample collection and preparation
- Carryout ditch sample evaluation, hydrocarbon and gas shows evaluation, wireline operations and logging while drilling operations

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 advanced geology for petroleum industry professionals (petroleum engineers, drilling engineers, geologists and geophysicists) involved in the important activities of reservoir evaluation, development and management, who require invaluable skills in the application of the techniques described for the successful exploitation of oil and gas reservoirs.

Course Fee

US\$ 8,500 per Delegate. 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.

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.

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 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. Stan Constantino, MSc, BSc, is a **Senior Petroleum & Reservoir Engineer** with over **35 years** of **Offshore & Onshore** extensive experience within the **Oil, Gas & Petroleum** industries. His area of expertise include **Reserves & Resources, Reserves Estimation & Uncertainty, Reservoir Characterization, Unconventional Resource & Reserves Evaluation, Oil & Gas Reserves Estimation, Methods for Aggregation of Reserves & Resources, Fractured Reservoir Classification & Evaluation, Petrophysics & Rock Properties, Seismic Technology, Geological Modelling, Water Saturation, Crude Oil & Natural Gas Demand, Exploration Agreements & Financial Modelling, Seismic Survey Evaluation, Exploration Well Identification, Field Production Operation, Field Development Evaluation, Crude Oil Marketing, Core & Log Data Integration, Core Logging, Advanced Core & Log Integration, Well Logs & Core Analysis, Advanced Petrophysics/Interpretation of Cased Hole Logs, Cased Hole Formation Evaluation, Cased Hole Formation Evaluation, Cased Hole Evaluation, Cased-Hole Logging, Applied Production Logging & Cased Hole & Production Log Evaluation, Cased Hole Logging & Formation Evaluation, Open & Cased Hole Logging, Screening of Oil Reservoirs for Enhanced Oil Recovery, Enhanced Oil Recovery, Enhanced Oil Recovery Techniques, Petroleum Economic Analysis, Oil Industry Orientation, Oil Production & Refining, Crude Oil Market, Global Oil Supply & Demand, Global Oil Reserves, Crude Oil Types & Specifications, Oil Processing, Oil Transportation-Methods, Oil & Gas Exploration and Methods, Oil & Gas Extraction, Technology Usage in Industrial Security; Upstream, Midstream & Downstream Operations; Oil Reservoir Evaluation & Estimation, Oil Supply & Demand, Oil Contracts, Government Legislation & Oil Contractual Agreements, Oil Projects & Their Feasibility (revenue and profitability), Water Flooding, Reservoir Souring & Water Breakthrough, Reservoir Performance Using Classical Methods, Fractured Reservoir Evaluation & Management, Reservoir Surveillance & Management, Reservoir Engineering & Simulation, Reservoir Monitoring, Pressure Transient Testing & Reservoir Performance Evaluation, Reservoir Characterization, Reservoir Engineering Applications with ESP and Heavy Oil, Reservoir Volumetrics, Water Drive Reservoir, Reserve Evaluation, Rock & Fluid Properties, Fluid Flow Mechanics, PVT Analysis, Material Balance, Darcy's Law & Applications, Radial Flow, Gas Well Testing, Natural Water Influx, EOR Methods, Directional Drilling, Drilling Production & Operations, Field Development & Production of Oil & Gas, Wireline Logging, Mud Logging, Cased Hole Logging, Production Logging, Slick Line, Coil Tubing, Exploration Wells Evaluation, Horizontal Wells, Well Surveillance, Well Testing, Design & Analysis, Well Testing & Oil Well Performance, Well Log Interpretation (WLI), Formation Evaluation, Well Workover Supervision, Pressure Transient Analysis and Petrophysical Log Analysis. Currently, he is the **CEO & Managing Director** of **Geo Resources Technology** wherein he is responsible in managing the services and providing technical supports to underground energy related projects concerning **field development, production, drilling, reservoir engineering and simulation.****

Throughout his long career life, Mr. Stan has worked for many international companies such as the **Kavala Oil, North Aegean Petroleum Company** and **Texaco Inc.**, as the **Managing Director, Operations Manager, Technical Trainer, Training Consultant, Petroleum Engineering & Exploration Department Head, Assistant Chief Petroleum Engineer, Reservoir Engineer, Resident Petroleum Engineer, Senior Petroleum Engineer** and **Petroleum Engineer** wherein he has been managing the evaluation of exploration wells, reservoir simulation, development training, production monitoring, wireline logging and well testing including selection and field application of well completion methods.

Mr. Stan has a **Master's** degree in **Petroleum Engineering** and a **Bachelor's** degree in **Geology** from the **New Mexico Institute of Mining & Technology (USA)** and from the **Aristotelian University (Greece)** respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership of Management (ILM)** and a member of the **Society of Petroleum Engineers, USA (SPE)**, **Society of Well Log Professional Analysts, USA (SPWLA)** and **European Association of Petroleum Geoscientists & Engineers (EAGE)**. Moreover, Mr. Stan published numerous scientific and technical papers and delivered various trainings, courses 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: Sunday, 08th of September 2024

0730 – 0800	Registration & Coffee
0800 - 0815	Welcome & Introductions
0815 – 0830	PRE-TEST
0830 – 1000	Introduction
1000 – 1030	Objectives & Outlines of the Course
1030 – 1045	Break
1045 – 1100	Free Discussion
1100 – 1200	Introduction to Geology & Earth Science
1200 – 1230	Overview on Rock Types & Cycling Igneous Rocks / Volcanic & Volcanism • Metamorphic Rocks • Sedimentary Rocks / Sedimentary Process • Rock Cycling
1230 – 1245	Break
1245 – 1420	Overview on Basic Rocks & Fluid Properties
1420 – 1430	Recap & Free Discussion
1430	Lunch & End of Day One

Day 2: Monday, 09th of September 2024

0730 – 0930	Overview on Structural Geology Introduction to Structural Geology • Primary Structures • Stresses /Strains & their Relations to Rock Deformation
0930 – 0945	Break
0945 – 1100	Overview on Structural Geology Secondary Structures (Faults, Fractures, Folds & Unconformities)
1100 – 1230	Introduction to Petroleum & Petroleum System Process Petroleum Definition • Petroleum (Origin / Occurrence) • Kerogen (Definition, Formation) • Classification of Petroleum • Conventional & Unconventional Resources
1230 – 1245	Break
1245 – 1420	Introduction to Petroleum & Petroleum System Process (cont'd) Petroleum Migration • Petroleum Accumulation • Petroleum Timing.
1420 – 1430	Recap & Free Discussion
1430	Lunch & End of Day Two

Day 3: Tuesday, 10th of September 2024

0730 – 0930	Overview on Petroleum System Elements Petroleum Source Rocks • Petroleum Cap Rocks • Trapping Mechanism
0930 – 0945	Break
0945 – 1100	Overview on Petroleum System Elements (cont'd) Petroleum Reservoir Rocks • Reservoir Properties • Reservoir Fluids
1100 – 1230	Overview on Exploration Techniques for Petroleum Introduction to Exploration Techniques • Geological Concept & Surface Geology • Geophysical Methods (Gravity, Magnetic & Seismic)





1230 – 1245	Break
1245 – 1420	Overview on Exploration Techniques for Petroleum (cont'd) Geochemical Methods • Subsurface Methods • Exploration Application
1420 – 1430	Recap & Free Discussion
1430	Lunch & End of Day Three

Day 4: Wednesday, 11th of September 2024

0730 – 0930	Overview on Drilling Methods & Techniques Vertical Wells • Deviated Wells & Horizontal Wells • How to Drill a Well? • Drilling Problems
0930 – 0945	Break
0945 – 1100	Overview on Drilling Methods & Techniques (cont'd) Well Casing & Cementing • Well Completion & Stimulation • Fracking • Oil Refinery
1100 – 1230	Overview on Monitoring a Well While Drilling Mud Logging • Lag Time Calculation
1230 – 1245	Break
1245 – 1420	Overview on Monitoring a Well While Drilling (cont'd) Rate of Penetration & its Interpretation • Sample Collection & Preparation
1420 – 1430	Recap & Free Discussion
1430	Lunch & End of Day Four

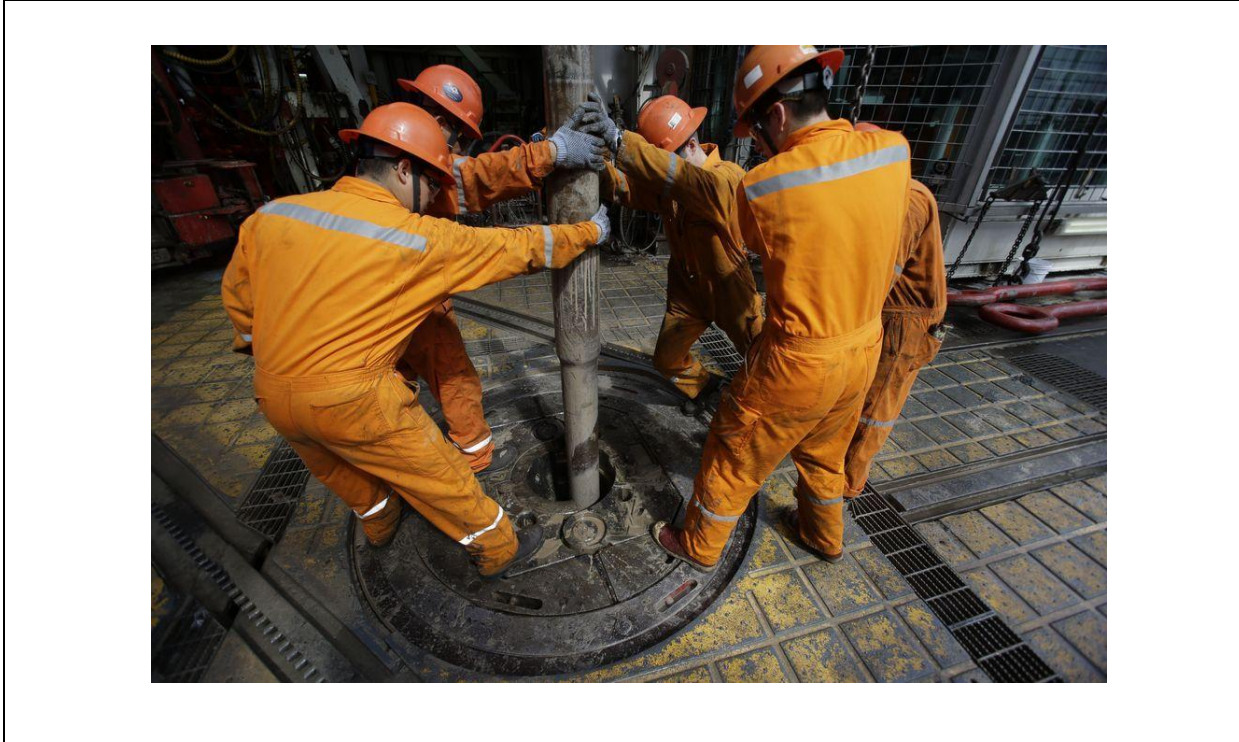
Day 5: Thursday, 12th of September 2024

0730 – 0930	Overview on Monitoring a Well While Drilling (cont'd) Ditch Sample Evaluation
0930 – 0945	Overview on Monitoring a Well While Drilling (cont'd) Hydrocarbon & Gas Shows Evaluation
0945 – 1100	Break
1100 – 1230	Overview on Monitoring a Well Post Drilling Introduction to Petrophysics • Wireline Operations
1230 – 1245	Break
1245 – 1345	Overview on Monitoring a Well Post Drilling (cont'd) Logging While Drilling Operations
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

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