COURSE OVERVIEW DE0638
Advanced Geology

Course Title
Advanced Geology

Course Date/Venue
Session 1: July 27-31, 2025/ Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar
Session 2: December 14-18, 2025/ Meeting Plus 8, City Centre Rotana Doha Hotel, 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.

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. 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: -

- 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.

- 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:

Mr. Ron Guney (**Ramazan Guney**), MSc, BSc, is a **Senior Geophysicist** with over **35 years** of **Offshore & Onshore** experience within the **Oil**, **Gas**, **Refinery** and **Petrochemical** industries. His expertise widely covers **Geophysics**, **Geophysical** Technology, **Borehole Geophysics**, **Seismology**, **Wave** Propagation & Velocities, **Seismic Acquisition** Techniques, **Seismic Data** Processing, **Vertical Seismic Profiling** (**VSP**), **Seismic Data** Interpretation, **Geomodelling**, Prospect Generation-Delineation & **Reservoir** Modelling, **Static** Modelling, Prospect Generation through **Seismic Structural & Stratigraphic** Interpretation, **Prospect-Play Risk** Assessment & Ranking, **Resource & Reserve Estimations**, **Post Stack Seismic Attribute** Analysis, **Post Stack Seismic** Inversion, Traveltime Inversion, **Crossborehole Seismic Tomography**, **Seismic Sequence Stratigraphy**, Program Coding (**VSP & Cross-borehole** Travel Time Inversion ART and SIRT), **Post Drill Well Assessment**, **Field** Development, **Seismostratigraphy**, **Seismotectonics & Geodynamics** & Modelling, Cartographic Information Systems (**CIS**), Geographic Information Systems (**GIS**), **Geodesy & Topography**, **Geodesy**, **Map Projections** & Coordinate Systems, Geological Maps (**GM**), **Topographic & Geologic Maps**, Cartography Assisted by Computer (**CAC**), Global Positional System (**GPS**), **Petroleum Geology**, **Advanced Petrophysics**, **Petroleum Exploration**, **Petroleum Economics**, **Drilling**, **Core-to-Log Data Integration** (**SCAL**), **Basin Modelling** & **Total Petroleum System** (**TPS**), **Well Logging**, **Formation Evaluation**, **Well Testing & Data** Interpretation, **Pore Pressure Prediction** and **Oil & Gas Reserves** Estimations. He is also an expert in **2D & 3D Seismic Interpretation Oil Risk** Analysis, **Landmark**, **Zmap+ Mapping** Package, **Petrel** Schlumberger, **Promax** Processing System and 3D Seismic Data Acquisition. Currently, he is the **Senior Geophysicist Consultant** of Eastern Offshore Black Sea E&P Projects.

During his long career, Mr. Guney has gained his practical and field experience through his various significant positions and dedication as the **Senior Geophysicist Consultant**, **Senior Geophysicist**, **Senior Project Geophysicist**, **Teaching Assistant**, **Lecturer**, **Instructor/Trainer** from numerous international companies such as the Eastprime Service Co., Emirates National Oil Company (ENOC) - Dragon Oil, OMV Petrol and Turkish Petroleum Corp, just to name a few. Mr. Guney has a **Master's** degree in **Geology** from the **University of New Orleans**, **USA** and a **Bachelor's** degree in **Geophysics** from the Istanbul Technical University. Further, he is a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and has **published books** and **scientific papers** such as Iterative Wavefront Reconstruction Technique (**IWR**), **Mathematical Geophysics**, **Model Optimisation in Exploration Geophysics**, **Importance of Seismic Interpretation Systems** and delivered various trainings, seminars, workshops, courses and conferences 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 & 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

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

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

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

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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