COURSE OVERVIEW DE0638-4D
Advanced Geology

Course Title
Advanced Geology

Course Date/Venue
November 18-21, 2024/ Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
DE0638-4D

Course Duration/Credits
Four days/2.4 CEUs/24 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, sample video clips of the instructor's actual lectures & practical sessions during the course 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.

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: -

- 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.

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 **40 years** of **Offshore & Onshore** extensive experience within the **Oil**, **Gas & Petroleum** industries**.** His area of expertise include **Fractured Reservoir** Classification & Evaluation, Screening of Oil Reservoirs for **Enhanced Oil Recovery**, **Oil Reservoir** Evaluation & Estimation, **Reserves & Resources**, **Reserves Estimation** & **Uncertainty**, **Reserve** Evaluation, **OIP Estimation & Range** of **Uncertainty**, **Reservoir** Characterization, **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 & Heavy Oil, **Reservoir** Volumetrics, Water Drive **Reservoir**, **Unconventional Resource & Reserves** Evaluation, **Oil & Gas Reserves** Estimation, **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**, **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 Supply & Demand**, **Oil Contracts**, **Government Legislation & Oil Contractual Agreements**, **Oil Projects** & Their Feasibility (revenue and profitability), Rock & Fluid Properties, Fluid Flow Mechanics, PVT Analysis, Material Balance, Darcy's Law & Applications, Radial Flow, **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 Fee

US$ 6,750 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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: ***Monday 18th of November 2024***

0730 – 0800	*Registration & Coffee*
0800 - 0815	*Welcome & Introductions*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction***
0930 – 0945	*Break*
0945 – 1100	***Objectives & Outlines of the Course***
1100 - 1230	***Free Discussion***
1230 – 1245	*Break*
1245 – 1420	***Introduction to Geology & Earth Science***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Tuesday 19th of November 2024***

0730 – 0930	***Overview on Rock Types & Cycling*** *Igneous Rocks / Volcanic & Volcanism • Metamorphic Rocks • Sedimentary Rocks / Sedimentary Process • Rock Cycling*
0930 – 0945	*Break*
0945 – 1100	***Overview on Basic Rocks & Fluid Properties***
1100 – 1230	***Overview on Structural Geology*** *Introduction to Structural Geology • Primary Structures*
1230 – 1245	*Break*
1245 – 1420	***Overview on Structural Geology (cont'd)*** *Stresses /Strains & their Relations to Rock Deformation • Secondary Structures (Faults, Fractures, Folds & Unconformities)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: ***Wednesday 20th of November 2024***

0730 – 0930	***Introduction to Petroleum & Petroleum System Process*** *Petroleum Definition • Petroleum (Origin / Occurrence) • Kerogen (Definition, Formation) • Classification of Petroleum • Conventional & Unconventional Resources • Petroleum Migration • Petroleum Accumulation • Petroleum Timing*
0930 – 0945	*Break*
0945 – 1100	***Overview on Petroleum System Elements*** *Petroleum Source Rocks • Petroleum Cap Rocks • Trapping Mechanism • 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***
1430	*Lunch & End of Day Three*

Day 4: ***Thursday 21th of November 2024***

0730 – 0930	***Overview on Drilling Methods & Techniques*** *Vertical Wells • Deviated Wells & Horizontal Wells • How to Drill a Well? • Drilling Problems*
0930 – 0945	***Overview on Drilling Methods & Techniques (cont'd)*** *Well Casing & Cementing • Well Completion & Stimulation • Fracking • Oil Refinery*
0945 – 1100	*Break*
1100 – 1230	***Overview on Monitoring a Well While Drilling*** *Mud Logging • Lag Time Calculation • Rate of Penetration & its Interpretation • Sample Collection & Preparation Rate of Penetration & its Interpretation • Sample Collection & Preparation • Ditch Sample Evaluation • Hydrocarbon & Gas Shows Evaluation*
1230 – 1245	*Break*
1245 – 1345	***Overview on Monitoring a Well Post Drilling*** *Introduction to Petrophysics • Wireline Operations • 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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