

# **COURSE OVERVIEW DE0384 Integrated Petrophysics for Reservoir Characterization**

#### **Course Title**

Integrated Petrophysics for Reservoir Characterization

#### Course Date/Venue

September 08-12, 2024/TBA Meeting Room, City Centre Rotana Doha, Doha, Qatar

# Course Reference

DE0384

#### Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

#### **Course Description**



practical and highly-interactive 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 Integrated Petrophysics for Reservoir Characterization. It covers the basic petrophysical concepts and their relevance in reservoir characterization; the role of petrophysics in reservoir engineering including rock properties and their measurements; the log interpretation, core analysis and correlation with log data; the data acquisition techniques in petrophysics and advanced log interpretation techniques; the quantitative log analysis and calibration, shaly sand analysis and carbonate reservoir characterization; identifying and analyzing fractures using petrophysical data; and integrating petrophysical data with geological models.

During this interactive course, participants will learn the reservoir heterogeneity and petrophysical models; the fluid saturation distribution; the capillary pressure analysis and applications; the techniques for mapping petrophysical parameters across the reservoir; the NMR (nuclear magnetic resonance) logging and interpretation, formation testing and pressure analysis; integrating production data with petrophysical analysis; the role of geomechanics aspects in petrophysics; the latest technologies in petrophysics; the uncertainties in petrophysical interpretation; the advanced reservoir characterization techniques, petrophysical analysis for unconventional reservoirs; and the simulation and modeling based on petrophysical data.

























#### **Course Objectives**

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

- Apply and gain an in-depth knowledge on integrated petrophysics for reservoir characterization
- Discuss the basic petrophysical concepts and their relevance in reservoir characterization
- Identify the role of petrophysics in reservoir engineering including rock properties and their measurements
- Carryout log interpretation, core analysis and correlation with log data
- Carryout data acquisition techniques in petrophysics and advanced log interpretation techniques
- Employ quantitative log analysis and calibration, shaly sand analysis and carbonate reservoir characterization
- Identify and analyze fractures using petrophysical data and integrate petrophysical data with geological models
- Analyze reservoir heterogeneity and petrophysical models and apply fluid saturation distribution analysis
- · Carryout capillary pressure analysis and applications including techniques for mapping petrophysical parameters across the reservoir
- Illustrate NMR (nuclear magnetic resonance) logging and interpretation, formation testing and pressure analysis
- Integrate production data with petrophysical analysis and discuss the role of geomechanics aspects in petrophysics
- Discuss the latest technologies in petrophysics as well as assess and manage uncertainties in petrophysical interpretation
- Employ advanced reservoir characterization techniques, petrophysical analysis for unconventional reservoirs and simulation and modeling based on petrophysical data

#### **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

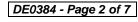
This course provides an overview of all significant aspects and considerations of characterization integrated petrophysics for reservoir for geoscientists, petrophysicists, reservoir engineers, drilling and completion engineers, oil and gas managers, consultants and those who work in the oil and gas industry, specifically those involved in reservoir characterization and exploration.



















### **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.

#### Course Fee

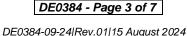
**US\$ 8,500** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day

















#### 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, Sequence Stratigraphy, 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.



















#### Training Methodology

All our Courses are including Hands-on Practical Sessions using equipment, Stateof-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.

#### **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 workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Sunday, 08th of September 2024 **Dav 1:** 

Duy 1.	Gunday, 66 of Geptember 2024
0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0930	<b>Overview of Petrophysical Concepts:</b> Basic Petrophysical Concepts & their Relevance in Reservoir Characterization
0930 - 0945	Break
0945 - 1030	<b>Role of Petrophysics in Reservoir Engineering</b> : The Integration of Petrophysical Data in Reservoir Engineering
1030 - 1130	<b>Rock Properties &amp; their Measurements</b> : Key Rock Properties like Porosity, Permeability & Saturation
1130 – 1215	Log Interpretation: Basic Principles of Well Log Interpretation
1215 – 1230	Break
1230 – 1330	<b>Core Analysis &amp; Correlation with Log Data</b> : Techniques for Correlating Core Data with Log Interpretations
1330 – 1420	<b>Petrophysical Data Acquisition</b> : Overview of Data Acquisition Techniques in Petrophysics
1420 – 1430	Recap
1430	Lunch & End of Day One

Monday, 09th of September 2024 Day 2:

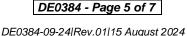
0730 - 0830	Advanced Log Interpretation Techniques: Complex Log Interpretation
	Methods
0830 - 0930	Quantitative Log Analysis & Calibration: Techniques for Quantitative Log
	Analysis & Calibration with Core Data
0930 - 0945	Break
0945 – 1100	Shaly Sand Analysis: Specific Methods for Interpreting Data in Shaly Sand
	Reservoirs





















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1100 – 1215	Carbonate Reservoir Characterization: Special Considerations in
	Petrophysics for Carbonate Reservoirs
1215 - 1230	Break
1230 – 1330	Fracture Identification & Analysis: Identifying & Analyzing Fractures
	Using Petrophysical Data
1330 - 1420	Case Studies in Log Analysis: Analyzing Real-World Examples to Reinforce
	Learning
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 3 Tuesday, 10th of September 2024

Day 3:	ruesday, 10" or September 2024
0730 - 0830	Integrating Petrophysical Data with Geological Models: Techniques for
	Integrating Petrophysical Data with Geological Models
0830 - 0930	Reservoir Heterogeneity & Petrophysical Models: Understanding &
	Modeling Reservoir Heterogeneity
0930 - 0945	Break
0945 - 1100	Fluid Saturation Distribution Analysis: Methods for Analyzing Fluid
	Saturation Distributions in Reservoirs
1100 – 1215	Capillary Pressure Analysis & Applications: Capillary Pressure
	Measurement & its Implications in Reservoir Characterization
1215 - 1230	Break
1230 – 1420	Petrophysical Parameter Mapping: Techniques for Mapping Petrophysical
	Parameters Across the Reservoir
1420 - 1430	Recap
1430	Lunch & End of Day Three

Wednesday, 11th of September 2024 Day 4:

Duy 7.	Weariesday, 11 of September 2024
0730 - 0830	NMR Logging & Interpretation: Application of NMR (Nuclear Magnetic
	Resonance) Logging
0830 - 0930	<b>Formation Testing &amp; Pressure Analysis</b> : Techniques for Formation Testing
	& Pressure Data Analysis
0930 - 0945	Break
0945 – 1100	Integrating Production Data with Petrophysical Analysis: How to
	Combine Production Data with Petrophysical Findings
1100 – 1215	Geomechanical Aspects in Petrophysics: The Role of Geomechanics in
1100 - 1213	Petrophysical Analysis
1215 – 1230	Break
1230 - 1330	Emerging Technologies in Petrophysics: The Latest Technological
	Advancements in the Field
1330 – 1420	Case Study: Integrated Reservoir Characterization: Detailed Analysis of a
	Case Study Involving Integrated Reservoir Characterization
1420 - 1430	Recap
1430	Lunch & End of Day Four

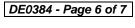
Thursday, 12th of September 2024 Dav 5:

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0730 - 0830	Uncertainty Analysis in Petrophysical Interpretation: Techniques for
	Assessing & Managing Uncertainties in Petrophysical Interpretation
0830 - 0930	Advanced Reservoir Characterization Techniques: Exploring Advanced
	Methodologies for Detailed Reservoir Characterization
0930 - 0945	Break
0945 – 1230	Petrophysical Analysis for Unconventional Reservoirs: Special
	Considerations for Unconventional Resources Like Shale & Tight Gas















1230 – 1245	Break
1245 – 1345	Simulation & Modeling Based on Petrophysical Data: Using
	Petrophysical Data for Simulation & Modeling Purposes
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:-



<u>Course Coordinator</u>
Jaryl Castillo, Tel: +974 4423 1327, Email: <u>jaryl@haward.org</u>

















