

COURSE OVERVIEW DE0042

Advanced Core Laboratory Measurements (CCA, SCAL & QC)

Course Title

Advanced Core Laboratory Measurements (CCA, SCAL & QC)

Course Date/Venue

Session 1: January 26-30, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: July 28-August 01, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

DE0042



Course Duration

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators



This course is designed to provide participants with a detailed and up-to-date overview of the advanced techniques and applications of SCAL. It covers the types of core and its analysis including the rock chemical composition and rock properties; the core acquisition and sampling, wellsite tasks and initial lab tasks; the effect of coring fluids and core recovery on fluid saturations; and the core preservation methods and core saturation methods.



During this interactive course, participants will learn the process appreciation and optimization, cleaning methods and drying methods; the permeability fundamentals, routine measurement methods and comparison of results and acceptable deviations from standards; the porosity and the stress effects on routine rock properties, pore volume compressibility; the core wettability, capillary pressure and core electrical properties; the relative permeability and initial versus residual relationships; and the RCA-SCAL programmes to fit the objectives of the core analysis study and reservoir characterization.

Course Objectives

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

- Apply and gain an advanced knowledge on the techniques and applications of SCAL
- Identify the types of core and its analysis including the rock chemical composition and rock properties
- Carryout core acquisition and sampling, wellsite tasks and initial lab tasks
- Recognize the effect of coring fluids and core recovery on fluid saturations as well as apply core preservation methods and core saturation methods
- Illustrate process appreciation and optimization, cleaning methods and drying methods
- Discuss permeability fundamentals, routine measurement methods and comparison of results and acceptable deviations from standards
- Explain porosity and the stress effects on routine rock properties, pore volume compressibility
- Discuss core wettability, capillary pressure and core electrical properties
- Differentiate relative permeability and initial versus residual relationships
- Design RCA-SCAL programmes to fit the objectives of the core analysis study and reservoir characterisation

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 special core analysis for petrophysicists and engineers, with little or without knowledge of coring operations and of routine or special core analysis.

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 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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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.

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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.

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. Samer Shukri, BSc, IWCF, is a Senior Drilling & Petroleum Engineer with over 25 years of offshore and onshore experience in the Oil & Gas, Refinery & Petrochemical industries. His wide expertise includes Workovers & Completions, Well Completion Design & Operations, Well Intervention, Well Life Cycle, Well Stimulation & Workover Planning, Workover Practices, Workover Operations, Well Integrity System, Well Control, Oil & Water Wells, Workover/Remedial Operations & Heavy Oil Technology, Plug &

Abandonment of Oil & Gas Wells, Petroleum Engineering, Open Hole & Cased Hole Logs, Petroleum Risk & Decision Analysis, Well Testing Analysis, Stimulation Operations, Coiled Tubing Operations, Coiled Tubing Equipment, Rigless Operations, Reserves Evaluation, Reservoir Fluid Properties, Reservoir Engineering & Simulation Studies, Reservoir Monitoring, Geology & Reservoir Engineering, Artificial Lift Design, Gas Operations, Applied Water Technology, Oil & Gas Production, X-mas Tree & Wellhead Operations & Testing, Wellbore Design & Construction, Drilling Fluids & Solids Control, Drilling Fluids & Cementing Operations, Drilling Practices & Techniques, Well Control & Blow Out Prevention, Stuck Piping & Fishing Operations, Rig Equipment Maintenance & Inspection, Rigging & Lifting Operations, WellCAP Driller, WellCAP Supervisor, Artificial Lift Systems (Gas Lift, ESP and Rod Pumping), Well Cementing, Oil Field Cementing, Production Optimization, PLT Correlation, Slickline Operations, Well Testing, Production Logging, Wireline Logging, Wireline Technology, Wireline Fishing Operations, Project Evaluation & Economic Analysis. Further, he is also well-versed in Marine Environment Protection, Maritime Professional Training, Operational Audit, Improvement, Planning & Management, Climate Change & Emissions Trading Services, International Trade & Shipping, **Fitness for Service-API 579, Refining Process & Petroleum Products, OSHA (General Industry & Construction), IOSH (Managing Safely, Working Safely), HSE Standards & Procedures in the Oilfield, HSE Principles, Incident Prevention & Incidents, Working at Height, First Aid, H2S Awareness, Defensive Driving, Risk Assessment, Authorized Gas Tester (AGT), Confined Space Entry (CSE), Root Cause Analysis (RCA), Negotiation & Persuasion Skills, ISO-9001 Quality Management System (QMS), ISO-14001 Environmental Management System (EMS), ISO-45001 Occupational Health and Safety Management System (OHSMS), ISO-17020 Conformity Assessment, ISO/TS-29001 Quality Management System, IOS-50001-Energy Management System (EnMS) and Basic Offshore Safety Induction & Emergency.** Currently, he is actively involved in **Project Management** with special emphasis in **commissioning of new wells, completion design, well integrity management, production technology** and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning.

During his career life, Mr. Samer has gained his field experience through his various significant positions and dedication as the **Senior Production Engineer, Well Services Department Head, Senior Well Services Supervisor, Senior Well Integrity Engineer, Senior HSE Engineer, Well Services Supervisor, Drilling/Workover Supervisor, International oil & Gas Trainer, Leadership & Management Instructor and Senior Instructor/Trainer** from the various international companies such as the ADCO, Al Furat Petroleum Company (AFPC), Syrian Petroleum Company (SPC), Petrotech, Global Horizon-UK, HDTC, Petroleum Engineers Association, STC, Basra University and Velesto Drilling Academy, just to name a few.

Mr. Samer has **Bachelor's degree in Petroleum Engineering.** Further, he is an **Accredited IWCF Drilling & Well Intervention Instructor, a Certified Instructor/Trainer, a Certified Train-the-Trainer** and further delivered innumerable training courses, seminars, conferences and workshops worldwide.

Course Fee

US\$ 8,000 per Delegate + **VAT**. This rate includes H-STK® (Howard 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 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 & Introduction
0815 - 0830	PRE-TEST
0830 - 0930	Introduction to Special Core Analysis (SCAL) Why Core & Fluid Analyses? • Types of Core • Types of Core Analyses • Typical Objectives
0930 - 0945	Break
0945 - 1100	Texture & Composition Definitions • Terms & Influence • Rock Chemical Composition • Clay Minerals • Grain Size Parameters & Influence • Examples of Influence on Rock Properties • Pore Geometry-Rock Property Quiz
1100 - 1230	Core Acquisition & Sampling Planning & Core Acquisition • Acquisition Effects on Rock Properties • Wellsite Tasks • Initial Lab Tasks
1230 - 1245	Break
1245 - 1420	Reservoir & Core Saturations Effect of Coring Fluids & Core Recovery on Fluid Saturations • Core Preservation Methods • Core Saturation Methods & Applications
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 - 0930	Cleaning & Drying Process Appreciation & Optimization • Objectives • Concerns • Pore Contaminants & Solvents • Cleaning Methods • Drying Methods
0930 - 0945	Break
0945 - 1100	Permeability Definitions • Relation to Texture • Permeability Fundamentals • Factors Affecting Permeability Values • Correlations & Examples • Routine Measurement Methods & Comparison of Results • Acceptable Deviations from Standards



1100 – 1245	Porosity <i>Fundamentals & Definitions • Log & Core Porosities • Pore Models & Pore Types • Methods</i>
1245 – 1300	<i>Break</i>
1300 - 1420	Stress Effects on Routine Rock Properties, Pore Volume Compressibility <i>General • Reservoir vs. Lab Loading • Determining Representative Lab Net Stress • Net Stress Effects on Permeability, Porosity, Saturations • Rock Properties vs. Increasing Net Stress</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0930	Core Wettability <i>Definitions & General • Wettability Test Methods</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Core Wettability (cont'd) <i>Wettability Profiles • Samples for Oil & Water Flow Tests</i>
1100 – 1245	Capillary Pressure <i>General Applications • Theory & Equations • Methods & Example Data • Effects of Clay, Net Stress, Wettability</i>
1245 – 1300	<i>Break</i>
1300 - 1420	Capillary Pressure (cont'd) <i>Interfacial Tension & Contact Angle • Relation to Reservoir • Data Refining, QC/QA • Capillary Model Examples</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0930	Core Electrical Properties: Electrical Properties
0930 – 0945	<i>Break</i>
0945 – 1100	Core Electrical Properties: Electrical Properties (cont'd)
1100 – 1245	Relative Permeability & Initial vs. Residual Relationships <i>Definitions, Concepts, Common Terminology • Applications</i>
1245 – 1300	<i>Break</i>
1300 - 1420	Relative Permeability & Initial vs. Residual Relationships (cont'd) <i>Controlling Factors • Laboratory Tests</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Four</i>

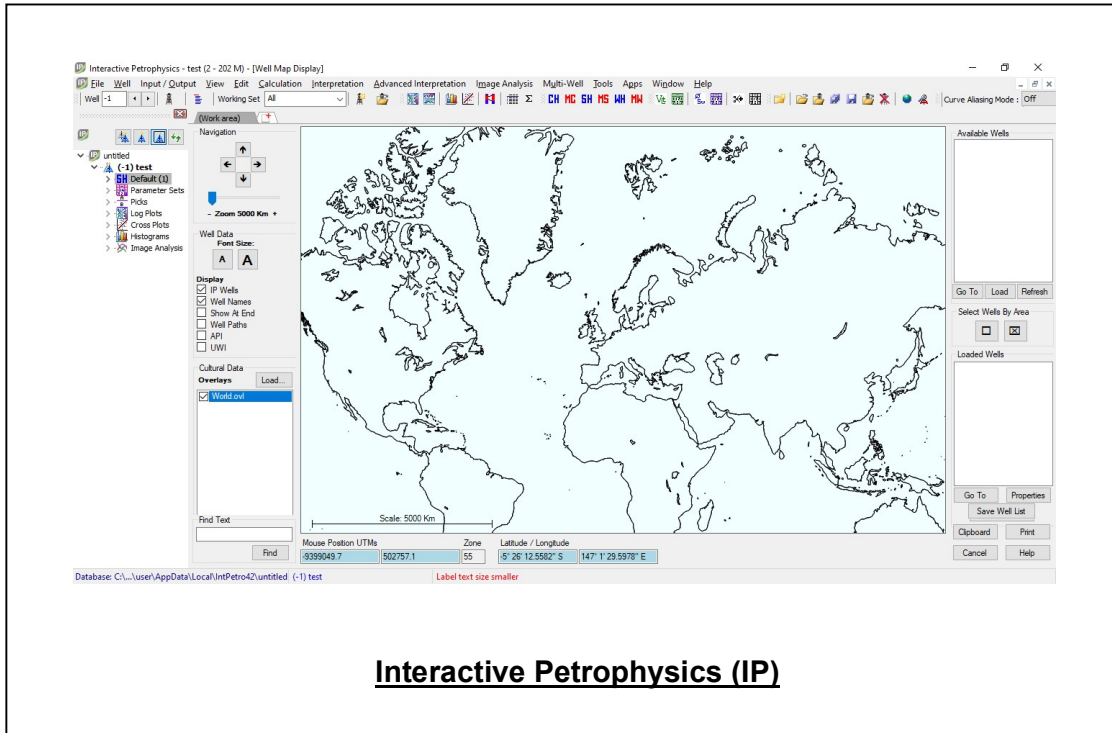
Day 5

0730 – 0930	Relative Permeability & Initial vs. Residual Relationships (cont'd) <i>Gas Flood Tests • Initial-Residual Relationships</i>
0930 - 0945	<i>Break</i>
0945 – 1045	Relative Permeability & Initial vs. Residual Relationships (cont'd) <i>Application Examples</i>

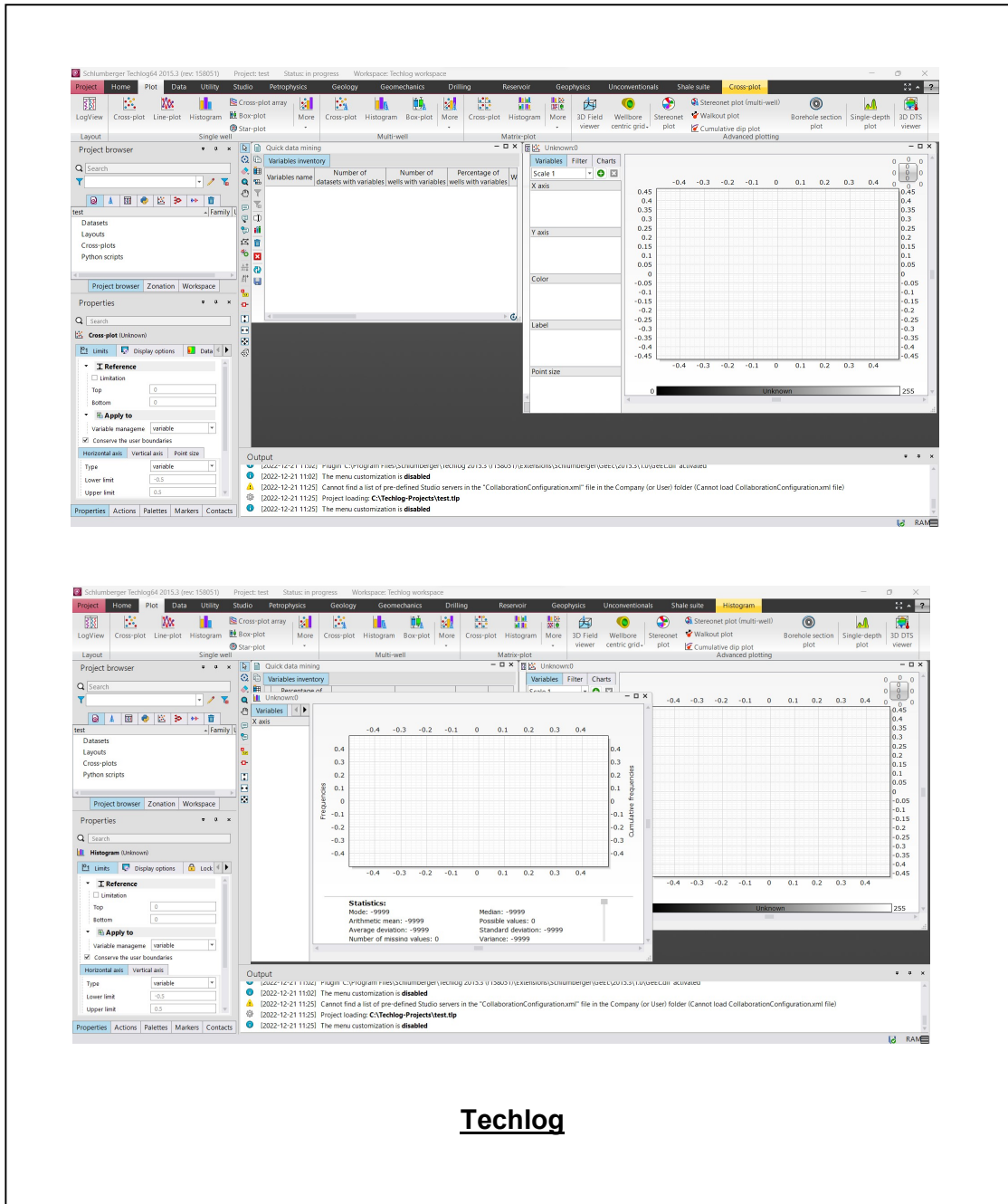
1045 – 1145	Core Analysis Programme Design <i>Designing RCA-SCAL Programmes to Fit the Objectives of the Core Analysis Study, Reservoir Characterisation</i>
1145 – 1200	Break
1200 - 1345	Core Analysis Programme Design (cont'd) <i>Designing RCA-SCAL Programmes to Fit the Objectives of the Core Analysis Study, Reservoir Characterisation (cont'd)</i>
1345 - 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Simulator (Hands-on Practical Sessions)

Practical session will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulator “Interactive Petrophysics (IP)” and “Techlog” software.



Interactive Petrophysics (IP)



Course Coordinator

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