COURSE OVERVIEW DE0090
Reservoir Management & Monitoring

Course Title
Reservoir Management & Monitoring

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
DE0090

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.

Oil Reservoirs have been created by complex sedimentary and diagenetic processes, and modified by a history of tectonic change. Reservoirs are complex systems on all scales. Decisions such as pumping and injection, new well placement, and drilling in an active oil field, are typical of the complex relationships between reservoir engineering and oil field/reservoir management.

A reservoir's life begins with exploration that leads to discovery, which is followed by delineation of the reservoir, development of the field, production by primary, secondary, and tertiary means, and finally to abandonment. Integrated, sound reservoir management is the key to a successful operation throughout a reservoir's life. Further, the need to enhance recovery from the vast amount of remaining oil and gas-in-place, plus the global competition, requires better reservoir management practices. Reservoir engineering is the application of scientific principles to solve issues arising during the development and production of oil and gas reservoirs. This course covers the engineering operations involved in analysing the production behaviour of oil and gas wells, including well performance engineering, reservoir aspects of well performance, restricted flow into the wellbore, rate decline analysis, and fundamentals of artificial lift.

This course is designed to provide many tools and techniques to help address the challenges of providing a more reliable and sounder reservoir engineering & management. In addition to a wealth of classic information on the concepts and processes involved in reservoir engineering and management, the course presents insights about data acquisition, reservoir performance analysis & forecast, reservoir management economics and improved recovery processes. Further, the course is illustrated through a number of case studies which will be shown to the participants to help them appreciate the concepts presented in the course.

Course Objectives

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

- Apply systematic techniques in reservoir engineering and management
- Explain the integration of geoscience and engineering and know the reasons for integrating exploration and development technology
- Ensure the proper execution of the reservoir management process
- Illustrate the proper procedure for data acquisition, analysis and management which includes validation, storing, retrieval and application
- Explain the role of reservoir models as well as the importance of reservoir surveillance
- Apply the different methods of reservoir performance analysis and forecast & give emphasis on the integration of production/injection data, log data, pressure data and any subsurface data for analysis
- Provide details on the reservoir management economics which includes economic criteria, scenarios, economic evaluation, risk and uncertainties
- Acquire an up-to-date knowledge on the improved recovery processes related to waterflooding, thermal methods, chemical methods and EOR screening guidelines
- Implement reservoir management plans for newly discovered fields, secondary and EOR operated fields
- Plan the outlook and the next step & be ready with the current challenges and areas of further work for reservoir engineering and management

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 the applied reservoir engineering and management for those who are involved in analysis, characterization, simulation, integration, statistics and naturally fractured for reservoir. This includes engineers, geologists, geophysicists, managers, government officials, field operation staffs and other technical staff.

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 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:

Dr. Steve Ehrenberg, PhD, MSc, BSc, is a **Senior Geologist & Reservoir Engineer** with **45 years** of extensive experience within the **Oil** & **Gas**, **Petrochemical** and **Refinery** industries. His wide experience covers in the areas of **Core** & **Log Integration**, **Water Saturation**, **Coring** & **Core Analysis**, **Special Core Analysis**, **Log** Interpretation, Cased-Hole Logging, **Core Calibration**, **Core Analysis**, Core-to-Log Data Integration (**SCAL**), **Wireline** Logging, **Mud** Logging, **Cased Hole** Logging, **Production** Logging, **Well Logging**, **Reservoir** Management, **Reservoir** Appraisal & Development, **Carbonate Reservoir** Management, **Fractured Reservoirs** Evaluation & Management, **Naturally Fractured Reservoir**, Integrated **Carbonate Reservoir** Characterization, **Geological Modelling**, **Reservoir Characterization**, **Geomodelling**, Development **Geology**, **Petroleum Geology**, **Exploration Production**, **Structural Geology**, **Wellsite Geology**, Analytic Modelling Methods, **Sedimentary Geology**, **Geophysics**, **Geophysical Exploration**, **Reservoir** Engineering, **Reservoir** Engineering Applications, **Reservoir** Engineering & Stimulation, **Reservoir** Characterization, **Clastic Reservoir**, **Carbonate Reservoir Petrology**, Subsurface Facies Analysis, **Borehole Images, Geophysical Methods**, **Oil & Gas Exploration**, **Marine & Petroleum Geology**, **Reservoir Performance** Using Classical Methods, **Fractured Reservoir** Evaluation & Management, **Reservoir** Surveillance & Management, **Reservoir Monitoring**, , **Reservoir Volumetrics**, **Water Drive Reservoir**, **Reservoir Evaluation**, **Well Surveillance**, **Well Testing**, **Well Testing** & Oil Well Performance, Well Log Interpretation (**WLI**), Rock Physics & Seismic Data, **Formation Evaluation**, **Well Testing** & Data Interpretation, **Pore Pressure** Prediction and **Oil & Gas Reserves Estimations**, Well Workover Supervision, Description and Prediction of **Reservoir Quality**, **Sequence Stratigraphy** of Carbonate Systems and Introductory Geology.

During his career life, Dr. Ehrenberg held significant positions and dedication as **Consultant**, **Professor**, **Senior Reservoir Geologist**, **Senior Geologist**, **Research Geologist**, **Associate Professor**, **Assistant Professor** and **Senior Instructor/Trainer** from various international companies and universities such as the Badley Ashton & Associates Ltd., Khalifa University of Science and Technology, Sultan Qaboos University, PanTerra Geoconsultants B.V, UAE University, Statoil, Stavanger, Shell Development Company and Northern Illinois University.

Dr. Ehrenberg has a **PhD**, **Master's** and **Bachelor's** degree in **Geology** from the **University of California**, **USA** and **Occidental College**, **USA**, respectively. Further, he is a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**), a **Certified Instructor/Trainer** and has delivered numerous trainings, workshops, courses, seminars and conferences internationally.

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 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	***Reservoir Management Concepts*** *Definition of Reservoir Management ● History of Reservoir Management ● Fundamentals of Reservoir Management*
0930 – 0945	*Break*
0945 – 1100	***Reservoir Management Concepts (cont'd)*** *Synergy and Team ● Integration of Geoscience and Engineering ● Integrating Exploration and Development Technology*
1100 – 1230	***Reservoir Management Process*** *Setting Goals ● Developing Plan and Economics ● Implementation ● Surveillance and Monitoring*
1230 – 1245	*Break*
1245 – 1420	***Reservoir Management Process (cont'd)*** *Evaluation ● Revision of Plan & Strategies ● Reasons for Failure of Reservoir Management Programs ● Reservoir Management Case Studies*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2

0730 – 0900	***Data Acquisition, Analysis and Management*** *Data Types ● Data Acquisition and Analysis ● Data Validation*
0900 – 0915	*Break*
0915 – 1045	***Data Acquisition, Analysis and Management (cont'd)*** *Data Storing and Retrieval ● Data Application ● Example Data*
1045 – 1230	***Reservoir Model*** *Role of Reservoir Model ● Geoscience ● Seismic Data ● Geostatistics*
1230 – 1245	*Break*
1245 – 1420	***Reservoir Model (cont'd)*** *Engineering ● Integration ● Case Studies*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0900	***Reservoir Surveillance***
0900 – 0915	*Break*
0915 – 1045	***Reservoir Performance Analysis and Forecast*** *Natural Producing Mechanisms ● Reserves ● Volumetric Method*
1045 – 1230	***Reservoir Performance Analysis and Forecast (cont'd)*** *Decline Curve Method ● Material Balance Method ● Mathematical Simulation*
1230 – 1245	*Break*
1245 – 1420	***Integration of Production/Injection Data, Log Data, Pressure Data and any Subsurface Data for Analysis***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0900	***Reservoir Management Economics*** *Economic Criteria ● Scenarios ● Data*
0900 – 0915	*Break*
0915 – 1045	***Reservoir Management Economics (cont'd)*** *Economic Evaluation ● Risk and Uncertainties ● Economic Optimization Example*
1045 – 1230	***Improved Recovery Processes*** *Waterflooding ● Enhanced Oil Recovery Processes ● EOR Process Concepts ● Thermal Methods*
1230 – 1245	*Break*
1245 – 1420	***Improved Recovery Processes (cont'd)*** *Chemical Methods ● Miscible Methods ● EOR Screening Guidelines*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0900	***Reservoir Management Case Studies*** *North Ward Estes Field and Columbus Gray Lease ● McAllen Ranch Field ● Brassey Oil Field*
0900 – 0915	*Break*
0915 – 1045	***Reservoir Management Case Studies (cont'd)*** *Means San Andres Unit ● Teak Field ● Esso Malaysia Fields*

1045 – 1230	***Reservoir Management Plans*** *Newly Discovered Field ● Secondary and EOR Operated Field*
1230 - 1245	*Break*
1245 – 1345	***What's Next*** *The State of the Art ● Importance of Integrative Reservoir Management ● Current Challenges and Areas of Further Work ● Outlook and the Next Step*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes the real-life case studies and exercises: -

Course Coordinator

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