COURSE OVERVIEW DE0266
Applied Field Development Planning

Course Title
Applied Field Development Planning

Course Date/Venue
Please refer to page 3

Course Reference
DE0266

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

Field development planning comprises a great amount of investments and involves a high number of parameters related to the geological and structural characteristics of the reservoir, to the operational scheduling and the economic scenario. The importance of this problem demands the elaboration of methodologies that can help in the management decision making process, leading to better recovery strategies that increase both reserves and profitability of reservoirs.

The Field Development Plan (FDP) is the technical document containing the necessary information, for conducting a specific field development project. Field development plans comprise activities and processes required to develop a field: environmental impact, geophysics, geology, reservoir and production engineering, infrastructure, well design and construction, completion design, surface facilities, economics, and risk assessments.

Field Development Plan is the output of sequences of decisions and discipline-based study activities conducted in geoscience, reservoir engineering, production engineering and reservoir simulation. It is a basis for coming up with a robust way to developing, producing and maintaining hydrocarbon resource. It forms an input for designing associated surface facilities. Combined documents, both subsurface, and surface constitute the basis for the financial decision.

This course is designed to provide participants with an opportunity to learn the fundamental approach in writing a Field Development Plan (FDP). It emphasizes the importance of the sub-surface team (production profiles) working closely with the facilities team(s), in order to maximize the value of the project whilst managing risk. Realistic field examples are used to demonstrate the concepts. Participants will understand the methods of controlling the decision-making process to optimize the development. The course examples will illustrate the typical evaluation of field understanding, with a mixture of predictable and less predictable data acquired.

Course Objectives

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

- Apply and gain a fundamental knowledge on field development planning
- Develop an understanding of the theory and practice of field development planning
- Discuss the different phases of a reservoir life cycle as well as the reason and the need to come up with a field development plan in order to exploit the reservoir
- Identify the different field development options for the reservoir and the industry trends on maturing oil and gas projects
- Recognize the importance and benefits of integration of disciplines through working as a multi-disciplinary team
- Identify uncertainty, its significance and explain the importance of assessing it realistically
- Recognize hydrocarbon accumulations and apply exploration techniques
- Describe data integration and their interdependence
- Apply integration and timing of subsurface and surface for decision making process
- Determine the different interfaces and their relationship, implement data gathering and identify the need for reservoir monitoring
- Analyze key data collected during exploration as well as estimate hydrocarbons in place and estimate recoverable volumes
- Recognize recovery mechanisms and the facilities choice for possible development options
- Estimate development costs at this stage and identify the various components of a field development plan
- Appraise the trade–off between cost and value of data and assess how to ensure that the optimum amount of data is collected
- Describe and relate the importance of commercial goals to technical goals

- List the different tasks and activities that need to be done and reported in a field development plan
- Review the concepts of FDP and introduce the opportunity on framing workflow, road map, risk register and stake holder mapping
- Evaluate the different development options and the key drivers for a successful development
- Identify project risks and key reservoir uncertainties as well as illustrate subsurface evaluation and building models
- Develop a multi-discipline appreciation and team building skills through the team exercises

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 is intended for reservoir engineers, petroleum engineers, production engineers, geoscientists, project managers and those involved in the preparation of field development plans (FDP).

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 Date/Venue

Session(s)	Date	Venue
1	February 25-29, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar
2	May 19-23, 2024	
3	October 06-10, 2024	
4	December 22-26, 2024	

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.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

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. George Basta, MSc, BSc, is a **Senior Reservoir Engineer** with extensive experience within the **Oil & Gas**, **Refinery** and **Petrochemical** industries. His wide expertise covers in the areas of **Reserve Calculation**, **Reservoir** Engineering, **Petroleum** Engineering & **Reservoir** Management, **Sandstone & Fractured Carbonate Reservoir**, **Reservoir Productivity**, Enhanced Oil Recovery (**EOR**), Thermal Enhanced Oil Recovery (**TEOR**), **Reservoir Pressure** Maintenance (**Water Flooding**), **Reservoir** Modelling, **Reservoir Surveillance**, **Steam Flood Reservoir** Management, Integrated **Carbonate Reservoir** Characterization, Applied **Reservoir Engineering** & Management, **Reservoir Surveillance** & Management, Applied **Production Logging & Reservoir Monitoring**, **Reservoir Management**, **Reservoir Geomechanics**, **Reservoir** Engineering, **Reservoir Characterization**, **Reservoir** Characterization, **Reservoir Fluid** Characterization & Management, **Fractured Carbonate Reservoir**, **Reservoir** Geophysics, **SCAL**, **Rocks & Fluids Properties**, **Production & Injection**, **Heavy Oil Recovery**, **Well Production** Engineering, **Well** Modelling, **Nodal Analysis**, **Well Data** Results Interpretation, **Well** Tests, Enhancing **Well Productivity**, **Injection Logging**, Original Hydrocarbon in Place (**OHIP**), **Reserve** Estimation, **Reserve** Evaluation, **Steam** Injection, **Polymer** Injection, Steam Pulsing Injection (**SPI**), Cyclic Group Steaming of Wells (**CGSW**), Quality Management System, **Volumetric** Analysis, **Monte Carlo** Techniques, **Material Balance** and Decline Curve Analysis (**DCA**). He is also well-versed in **PVTi**, **PVTP**, **PVTsim**, **PETREL** Software, **MBAL** Software, **Prosper** Software, CMG, OFM, Saphir/Ecrin, Advanced Excel, EORgui, IMEX, Thermal STARS, EXOTHERM, Eclipse, KAPPA Software and PETEX.

During Mr. George's career life, he has gained his thorough and practical experience through his various positions as the **Reservoir Surveillance Engineer**, **QA/QC Engineer**, **Field Engineer**, **Reservoir Surveillance Petroleum Consultant Engineer** and **Senior Instructor/Lecturer** for various companies like OPEC (Offshore Protection Engineering Company), Scimitar Production Egypt Ltd and the Business Development in Africa and MENA Regions.

Mr. George has **Master** and **Bachelor** degrees in **Petroleum Engineering**. Further, he is a **Certified Instructor/Trainer**, an active member of the Society of Petroleum Engineer (**SPE**) and Canadian Society of Petroleum Geologists (**CSPG**). Moreover, he published various books and scientific journals and has delivered numerous trainings, courses, seminars, conferences and workshops globally.

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 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	***The Different Phases of a Reservoir Life Cycle***
0930 – 0945	*Break*
0945 – 1100	***The Reason & the Need to Come Up with a Field Development Plan in Order to Exploit the Reservoir***
1100 – 1230	***Introduction of Different Field Development Options for the Reservoir***
1230 – 1245	*Break*
1245 – 1345	***Industry Trends on Maturing Oil & Gas Projects***
1345 - 1415	***Hydrocarbon Accumulations***
1415 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Overview of Exploration Techniques***
0930 – 0945	*Break*
0945 – 1100	***Data Integration & their Interdependence***
1100 – 1230	***Integration & Timing of Subsurface & Surface for Decision Making Process***
1230 – 1245	*Break*
1245 – 1345	***Different Interfaces & their Relationship***
1345 - 1415	***Data Gathering & Need for Reservoir Monitoring***
1415 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Key Data Collected During Exploration***
0930 – 0945	*Break*
0945 – 1100	***Estimating Hydrocarbons in Place***
1100 – 1230	***Estimating Recoverable Volumes***
1230 – 1245	*Break*
1245 – 1345	***Recovery Mechanisms***
1345 - 1415	***Facilities Choice for Possible Development Options***
1415 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Estimating Development Costs at this Stage***
0930 – 0945	*Break*
0945 – 1100	***Various Components of a Field Development Plan***
1100 – 1230	***Different Tasks & Activities that Need to be Done & Reported in a Field Development Plan***
1230 – 1245	*Break*

1245 – 1345	***Review the Concepts of FDP***
1345 -1415	***Introduction to Opportunity Framing Workflow, Road Map, Risk Register & Stake Holder Mapping***
1415 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Evaluating the Different Development Options***
0930 – 0945	*Break*
0945 – 1145	***What are the Key Drivers for a Successful Development?***
1145 – 1230	***Identifying Project Risks***
1230 – 1245	*Break*
1245 – 1315	***Identifying Key Reservoir Uncertainties***
1315 - 1345	***Subsurface Evaluation & Building Models***
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 the real-life case studies and exercises:-

Course Coordinator

Jaryl Castillo, Tel: +974 4423 1327, Email: jaryl@haward.org