



IE076: Multiphase Flow Metering

Training Description:

Over the last two decades the development, evaluation and use of Multiphase Flow Meters (MFM) systems has been a major focus for the oil & gas industry worldwide. Since the early 1990s, when the first commercial meters started to appear, there have been over 3,500 field applications of MFM for field allocation, production optimisation and well testing. So far, many alternative metering systems have been developed, but none of them can be referred to as

This intensive training course reviews and assesses both established and novel technologies suitable for measuring the flow rates of gas, oil and water in a three-phase flow. The technologies already implemented in the various commercial meters are evaluated in terms of advantages or shortcomings from an operator point of view. The lessons learned about the practical reliability, accuracy and use of the available technology are discussed. The course provides a critical and independent review of the current status and future trends of MFM.

Starting with an introduction to the complexities of the multiphase flows encountered in the oil & gas industry, the fundamental approaches to metering such flows are presented, vis-à-vis the solutions already implemented to date.

Special application areas, such as wet gas metering and heavy oil metering, are then introduced. Once the key multiphase measurement principles are understood, their current applicability for different metering purposes (from reservoir management to custody transfer) will be discussed, also in relation to estimating reserves.

The course includes short films and class discussions of selection criteria and field implementation issues.

Training Objectives:

By the end of the training, participants will gain an in-depth understanding of:

- ✓ The fundamentals of multiphase metering in petroleum engineering applications
- ✓ The current limitations of the available technology
- ✓ The interdisciplinary aspects of multiphase flow metering, which span from reservoir management to production optimisation, as well as from production allocation to reserves estimation

Training Designed for:

This course is intended for those reservoir engineers or production engineers who uses production data for the calibration and history matching of reservoir and wellbore flow models, and for the optimisation of reservoir management and production operations, those metering or allocation engineers who wants to learn the differences between conventional (single-phase) and multiphase flow measurement as well as those professionals who has to select, install, operate and interpret multiphase flow meters.

Prerequisites:

Participants should have some basic knowledge and understanding of conventional fluid metering and fluid properties.

Training Program:

FIVE DAYS:

- ❖ Pre-Test
- ❖ Introduction
- ❖ Multiphase flow fundamentals
- ❖ Introduction to multiphase flow metering
- ❖ Multiphase flow metering principles
- ❖ Base Sediment & Water, Multi-Phase Flow Metering and Water Cut measurements
- ❖ Key multiphase flow metering techniques
- ❖ Current status and limitation of multiphase flow metering
- ❖ Wet gas metering applications
- ❖ Heavy oil metering applications
- ❖ Non-conventional multiphase flow metering solutions
- ❖ Flow loops for validating and testing multiphase flow meters
- ❖ Types of Metering Prover Systems
- ❖ Proving at site
- ❖ Production optimisation, production allocation and reserves estimation using multiphase flow meters
- ❖ Course Conclusion
- ❖ Post-Test and Evaluation

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

This training course is available upon request in English or Arabic. Content, location and duration can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.



Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department