DIGITAL CLASSROOM

FLOW MEASUREMENT TRAINING PROGRAM

In Collaboration with TÜV SÜD NEL

14 Feb – 1 Mar 2022 | 10 Half-Days

9:00 AM – 1:00 PM (GMT +8)

Zoom Pro / Microsoft Teams

From RM 2,680/pax

Program Overview

In today's challenging working environment it is vitally important to keep up to date with the latest developments within industry; both in terms of the most recent technology advances and knowledge that can make your job easier. However, this can be harder and harder to accomplish given tighter constraints on time and travel.

This training program organized by Pace Up in collaboration with TÜV SÜD National Engineering Laboratory (NEL) will aim to meet these issues head on by providing the most flexible online training to date. You have the choice to attend all the interactive training courses, or you can choose the topic that is more relevant to your professional development. We offer 5 different courses over this 10 half-days training program.

Who Should Attend?

Anyone who is new to flow measurement both in a technical and non-technical capacity including technicians, engineers, sales people, administrators and managers. The course is intensive but will make an effective use of delegates' time.

Key Modules

- Fundamentals of Flow Measurement
- Introduction to Measurement Uncertainty
- Custody Transfer Flow Measurement Systems
- Flow Calculations
- Hydrocarbon Allocation

Course Methodology

- Workshop style
- Lectures
- Group activities
- Case studies
- Q&A

Trusted & Participated By

PETRONAS, ExxonMobil, Shell, KPOC, Hibiscus Petroleum, BASF PETRONAS CHEMICALS, sapura energy, OMV, enQuest, Mubadala Petroleum, CARIGALI HESS, MURPHY OIL CORPORATION, Petrofac, REPSOL

PACEUP Your Oil & Gas Training Solutions

In collaboration with: TÜV SÜD National Engineering Laboratory

HRD CORP CLAIMABLE

COURSE OUTLINE

DIGITAL CLASSROOM
FLOW MEASUREMENT
TRAINING PROGRAM

PACEUP
Your Oil & Gas Training Solutions

FUNDAMENTALS OF FLOW MEASUREMENT

Flow measurement is vital to many industrial sectors: water supply, oil extraction, gas distribution, and much of the process and pharmaceutical industry depend on flow measurement for quality control and custody transfer. To obtain the required level of accuracy at an appropriate price, it is crucial that the right meter is selected for the application and that it is appropriately used. However, the flow meter user is faced with a bewildering array of technologies and conflicting claims from manufacturers.

Objective

This course enables delegates to understand the issues surrounding flow measurement. It also provides the delegate with an unbiased view of the various technologies available and the basic knowledge required to make informed choices. Key aspects of flow measurement, all general meter types and their applications will be discussed and explained.

Who Should Attend?

Anyone who is new to flow measurement both in a technical and non-technical capacity including technicians, engineers, sales people, administrators and managers. The course is intensive but will make an effective use of delegates' time.

Course Content

- Basic of Fluid Flow
- Traditional Flow Measurement Technology
- Modern Flow Measurement Technology
- Multiphase Flow Metering
- Measurement Uncertainty
- Meter Management
- Network Management

INTRODUCTION TO MEASUREMENT UNCERTAINTY

Measurement is fundamental to the control of quality, efficiency and safety. This one day course is designed to impart a basic understanding of measurement uncertainty. Delegates will learn about the impact of uncertainty in industry, to identify important sources of uncertainty in measurement systems and receive practical guidance on the design of measurement techniques to minimize uncertainty.

Objective

This course will introduce delegates to the techniques required to identify what affects measurements and by how much. By ranking the effects, delegates will be able to guard against invalid conclusions and ensure that the key measurements are targeted for investment in new instrumentation.

The course is designed to impart a basic understanding of measurement uncertainty. Delegates will learn the appreciation of the impact of measurement uncertainty within the industry, to identify the important sources of uncertainty in measurement systems and receive practical guidance on the design of measurement techniques for improved uncertainty.

Who Should Attend?

Research and Development Engineers, Instrumentation Engineers, Quality Managers, Technical Managers

Course Content

- Overview of Uncertainty Concepts
- Basic Calculation Methods Type A Analysis
- Basic Calculation Method Type B Analysis
- Sensitivity Coefficients
- Combination of Uncertainties
- Practicalities of Uncertainty Estimation and How to Improve Measurement
- Monte Carlo Simulation Including Worked Example

In collaboration with:

TÜV SÜD National Engineering Laboratory

For more information, visit us at:
www.paceup.com.my

HRD CORP CLAIMABLE

COURSE OUTLINE

CUSTODY TRANSFER FLOW MEASUREMENT SYSTEMS

A transaction involving physical transfer of oil and gas from one operator to another is known as Custody Transfer. Accurate metering of the fluids being transferred between the two is therefore of vital importance. This one day training course will enable metering engineers to gain a knowledge of how fluids are metered in the oil and gas sector.

Objective

- Understand the requirement for Custody Transfer Measurement.
- Basic sizing techniques.
- Select the optimum meter type.
- Appreciate the various standards and regulations applied.

Who Should Attend?

Anyone who is new to flow measurement both in a technical and non-technical capacity including technicians, engineers, sales people, administrators and managers. The course is intensive but will make an effective use of delegates' time.

Course Content

- Introduction and Overview
- Flow Meters
- Meter Provers
- Density Measurement
- Crude Oil Sampling
- Secondary Instrumentation
- Flow Computers

FLOW CALCULATIONS

Accurate measurement of produced hydrocarbons has always been a very high priority for oil and gas operating companies. To satisfy this requirement, stringent requirements are set for the various calculations that are adopted to define the quantity and quality of the fluids being measured. There are numerous standards which define these parameters and this half day course explains the commonly used equations and standards by detailing the source of the calculations, the parameters used, the required inputs/outputs and their effect on the uncertainty of measurement.

Objective

This course provides for the delegates an introduction into the importance of and the requirements for the calculations and standards applied on orifice gas metering systems and liquid turbine metering systems. The course covers:

- Appropriate ISO, AGA and API standards
- Their background and application
- Gas calculations including corrections
- Liquid calculations including corrections
- Sources of error

Who Should Attend?

Delegates who require a basic understanding of measurement system calculations, their role and Effect in the measurement process, such as Metering Technicians & Engineers, Research and Development Engineers, Instrumentation Engineers, Quality Managers, Technical Managers, Metering System Designers. The course is intensive, to make effective use of delegates' time.

Course Content

- Introduction & Standards
- ISO 5167 Flow Calculations
- API & IP Liquid Calculations
- Sources of Error

COURSE OUTLINE

INTRODUCTION TO HYDROCARBON ALLOCATION

In Oil and Gas production environments, it is often necessary for operating companies to share production and transportation facilities. It is therefore important that the hydrocarbons entering such facilities are equitably allocated between the companies contributing to the system. The process of dividing the produced hydrocarbons, ensuring that each operator gets their allotted share is known as hydrocarbon allocation. This one day course is designed to describe the development of an allocation system and explain the different types of allocation calculations that are commonly applied.

Objective

The course will cover:

- What is Hydrocarbon Allocation?
- Design and development of an allocation system
- Functions of an allocation system
- Proportional allocation
- Mass Allocation
- Uncertainty based allocation by difference allocation

These modules will be complemented by a series of examples and case studies to illustrate the concepts being covered.

Who Should Attend?

- Allocation Engineers
- Instrument engineers
- Production engineers
- Technical managers
- Quality managers.

Course Content

- What is Hydrocarbon Allocation?
- Design and development of an allocation system
- Functions of an allocation system
- Proportional allocation
- Mass Allocation
- Uncertainty based allocation
- By difference allocation

In collaboration with:

TÜV SÜD National Engineering Laboratory

For more information, visit us at:
www.paceup.com.my

HRD CORP CLAIMABLE

YOUR EXPERT TRAINER

BRUNO G. PINGUET, PH.D.

Dr Bruno Pinguet, with the current position as "International Marketing & Scientific Advisor", is working for TÜV SÜD National Engineering Laboratory (Scotland) and based in southeast Asia (Malaysia). Bruno has more than 28 years' experience in single and multiphase flow measurements from downhole to surface applications, including subsea environment. He is recognized as one of the foremost leaders in the worldwide multiphase business thru knowledge sharing, presentations, books, publications, and technical advice. He is also "Visiting Professor" of Coventry University.

His main domains of expertise include multiphase, wet gas flow metering, sampling, fluid properties, allocation, tieback, uncertainty measurements. He is lately focusing on marine and bunkering businesses.

Before, he was "Marketing & Technical Manager", supporting the global multiphase business and reporting to Schlumberger Testing Headquarter - Paris (France). He was tasked with the global technical and business support of the flow metering technologies applications (with a focus on unconventional oil or specific applications such as 4 phases, sand production, shale business…), including new business development role for subsea and topside applications. He was recognized worldwide technically at the level of "Scientific Advisor" and involved in the new product development phases with different engineering centres.
Bruno has been a service company representative of the Oil and Gas group steering committee of the Department of Trade and Industries (UK), and he is part of other technical committees for multiphase conferences and European Projects, including standard committees such as API.

He has a "Doctor of Philosophy in multiphase flows" and more than 150 publications and articles. He has several patents in the multiphase environment, from optical and fluid properties measurements to sampling and nuclear techniques of measurements and numerous awards.

COMMENT AND REVIEW

"The course technical content is totally full of impact. This course meets more than my expectation."

Allocation Engineer, PETRONAS MPM

"Love how the expert trainer putting real industries references to the topic to make a good understanding."

Project Engineer (E&I), Kebabangan Petroleum Operating Company Sdn Bhd

"This training is a very good for a new metering engineer to attend."

Hydrocarbon Allocation Engineer, Sabah Shell Petroleum

"I am able to know overall metering concept, relate it to allocation and able to learn on the calculation process. It helps on my works as an Allocation Engineer."

Allocation Engineer, PETRONAS MPM

"Good explanation on Flow Measurement technologies and selection criteria."

Measurement Engineer, Exxonmobil

"The real project examples really give a good sense of the concept and how to apply accordingly on-the-job,."

SE (Technology and Process Optimization), BASF Petronas Chemicals Sdn Bhd

"Provide good introduction and refresher to fluid mechanics and types of flow models and its respective functions."

Senior Instrument/Control Engineer, Murphy Oil

REGISTRATION FORM

DIGITAL CLASSROOM
FLOW MEASUREMENT
TRAINING PROGRAM

PACEUP
YOUR OIL & GAS TRAINING SOLUTIONS

TRAINING DETAILS

Time : 9:00 AM – 1:00 PM (GMT +8)
Platform : Zoom Pro / Microsoft Teams

**Please tick the course of your interest*

- ☐ 14 - 15 Feb - Fundamentals of Flow Measurement
- ☐ 17 - 18 Feb - Introduction to Measurement Uncertainty
- ☐ 21 - 22 Feb - Custody Transfer Flow Measurement Systems
- ☐ 24 - 25 Feb - Flow Calculations
- ☐ 28 Feb - 1 Mar - Introduction to Hydrocarbon Allocation

Number of Course	Grouping Price/pax (min. 3 pax)	Normal Price/Pax
1	RM 2,680	RM 3,480
2	RM 4,240	RM 5,040
3	RM 5,680	RM 6,480
4	RM 7,000	RM 7,800
5	RM 8,200	RM 9,000

*Register before **1 February 2022***

PARTICIPANTS

Name : .....
Job Title : .....
Telephone : .....
Email : .....

Name : .....
Job Title : .....
Telephone : .....
Email : .....

Name : .....
Job Title : .....
Telephone : .....
Email : .....

Note : Please attach a list of participants if insufficient space.

AUTHORISATION

Name : .....
Job Title : .....
Telephone : .....
Email : .....

ORGANISATION

Name : .....
Telephone : .....
Fax : .....

SEND INVOICE TO

Department : .....
Address : .....
.....
.....

PAYMENT DETAILS

1. Participants are required to pay before or on the first day of the course.
2. (Please Tick Where Applicable)

☐ Cheque made payable to Pace Up Sdn. Bhd.

☐ Credit Card PayPal

☐ Bank Transfer : Pace Up Sdn. Bhd.
Sdn. Bhd. Bank : Malayan Banking Bhd.
Bank Address : Taman Setiawangsa Branch,
Wisma Prima Peninsular,
2, Jalan Setiawangsa 11,
Taman Setiawangsa,
54200 Kuala Lumpur

Account No. : 562188319491
Swift Code : MBBEMYKL

(All bank charges to be borned by payer.
Please ensure that Pace Up receives
the full invoiced amount.)

3. We do not give refunds for cancellations. However, you may substitute participant (s) at any time.
4. If we receive cancellations in writing more than (7) days before the training course, you will receive a 100% credit (valid for one year) to be used for another training course.
5. Cancellations received less than seven days before to the training course may result no credit for future training.
6. If we postpone training course, participant payments for the postponed course will be 100% credited towards the course at a rescheduled date.
7. We shall assume no liability whatsoever in the event this training course is cancelled, rescheduled or postponed.

IN HOUSE TRAINING SOLUTION

☐ Yes, I would like to organise this training course in-house and save up to 50% of total course fees! Please send me more information.

Please complete this form and fax to ***+603 4256 9286*** or,
scan and email to ***azmirul@paceup.com.my***

For more info, please call ***Azmirul*** at ***+60 19 275 4900***

HRD CORP CLAIMABLE