

COURSE OVERVIEW DE0170
Pressure Transient Analysis & Practice

Course Title

Pressure Transient Analysis & Practice

Course Date/Venue

Session 1: May 19-23, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: November 09-13, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

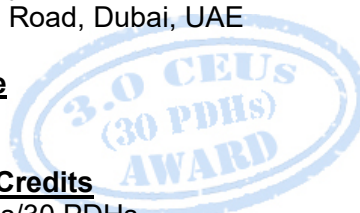


Course Reference

DE0170

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.

The pressure transient test is one of the more important tools for evaluating reservoir performance. By measuring the change of pressure over time, pressure transient information is obtained. The method entails measuring flow rates and pressures under a range of flowing conditions and applying the data to a mathematical model. Fundamental data relating to the interval under test, such as reservoir height and details of the reservoir fluids, are also part of the input.



In many cases, wells and reservoirs were managed according to the data based on pressure transient tests. However, as the quality of information obtained from a pressure transient test depends, among other things, on the quality of the pressure and flow data, it is imperative to prevent inaccuracy in the pressure and flow measurements to assure integrity of data. At present, conventional pressure transient testing methods have been adapted in the petroleum industry. These methods provide useful general indicators of reservoir permeability, the flow capacity of the reservoir and any damage that may be restricting productivity.



This course is designed for analysts to obtain a better understanding of the concepts, principles and practices used in pressure transient tests. It is important to understand the limitations of the assumptions being made and the practical implications they have on the interpretations derived from the test.

The course covers the fundamentals of fluid flow on porous media; the concept of flow and build-up test analysis; the development of type curves and its application in the well test; analysis of pressure-buildup distortion by phase redistribution and procedure; well-test data in naturally fractured reservoirs; and the various models of matrix flow.

At the completion of the course, participants will be able to employ proper procedures and techniques used in drillstem testing and analysis; identify the various methods of injection-well testing in a ratio reservoir condition; restate the concepts of interferences and pulse testing; implement well test and their specific purposes; demonstrate the steps of running, estimating and comparing the different types of horizontal well tests models; recognize the behavior of well and reservoir response patterns observed in well test and how to quantify them from pressure transient data.

Course Objectives

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

- Apply and gain an in-depth knowledge on pressure transient testing and reservoir performance evaluation
- Recognize the fundamentals of fluid flow in porous media including the diffusivity equation, initial and boundary conditions and deconvolution
- Introduce the concept of flow and build-up test analysis and explain its complications in actual tests
- Discuss the development of type curves and recognize its application in the well test
- Explain analysis of pressure-buildup distortion by phase redistribution and explain its procedure
- Interpret well-test data in naturally fractured reservoirs and list the various models of matrix flow
- Employ proper procedures and techniques used in drillstem testing and analysis
- Identify the various methods of injection-well testing in a ratio reservoir condition
- Restate the concepts of interferences and pulse testing including the recommendations for multiple-well testing
- Explain the types and designs and implementation of well test and understand their specific purposes
- Demonstrate the steps of running, estimating and comparing the different types of horizontal well tests models and be aware of its implications in the reservoir performance
- Recognize the behavior of well and reservoir response patterns observed in well tests, what well and reservoir parameters can be quantified, and how to quantify them from pressure transient data

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 a wide understanding and deeper appreciation of pressure transient testing and reservoir performance evaluation for production, operations and reservoir engineers, geologists, analysts field personnel, senior technicians and field supervisors with an engineering background and analysts involved with the design, supervision and interpretation of well tests who need to obtain a better understanding of the concepts, principles and practices used in pressure transient tests.

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\$ 8,000 per Delegate + **VAT**. 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 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:



Dr. Chris Kapetan, PhD, MSc, is a Senior Petroleum Engineer with over 30 years of international experience within the onshore and offshore oil & gas industry. His wide experience covers Asset Management Principles, Risks & Economics, Petroleum Economics, Decision Analytic Modelling Methods for Economic Evaluation, Probabilistic Risk Analysis (Monte Carlo Simulator) Risk Analysis Foundations, Global Oil Demand, Crude Oil Market, Global Oil Reserves, Oil Supply & Demand, Governmental Legislation, Contractual Agreements, Financial Modeling, Oil Contracts, Project Risk Analysis, Feasibility Analysis Techniques, Capital Operational Costs, Oil & Gas

Exploration Methods, Reservoir Evaluation, Extraction of Oil & Gas, Crude Oil Types & Specifications, Sulphur, Sour Natural Gas, Natural Gas Sweetening, Petroleum Production, Field Layout, Production Techniques & Control, Surface Production Operations, Oil Processing, Oil Transportation-Methods, Flowmetering & Custody Transfer and Oil Refinery. Further, he is also well-versed in Enhanced Oil Recovery (EOR), Electrical Submersible Pumps (ESP), Oil Industries Orientation, Geophysics, Cased Hole Formation Evaluation, Cased Hole Applications, Cased Hole Logs, Production Operations, Production Management, Perforating Methods & Design, Perforating Operations, Fishing Operations, Well & Reservoir Testing, Reservoir Stimulation, Hydraulic Fracturing, Carbonate Acidizing, Sandstone Acidizing, Drilling Fluids Technology, Drilling Operations, Directional Drilling, Artificial Lift, Gas Lift Design, Gas Lift Operations, Petroleum Business, Field Development Planning, Gas Lift Valve Changing & Installation, Well Completion Design & Operation, Well Surveillance, Well Testing, Well Stimulation & Control and Workover Planning, Completions & Workover, Rig Sizing, Hole Cleaning & Logging, Well Completion, Servicing and Work-Over Operations, Practical Reservoir Engineering, X-mas Tree & Wellhead Operations, Maintenance & Testing, Advanced Petrophysics/Interpretation of Well Composite, Construction Integrity & Completion, Coiled Tubing Technology, Corrosion Control, Slickline, Wireline & Coil Tubing, Pipeline Pigging, Corrosion Monitoring, Cathodic Protection as well as Root Cause Analysis (RCA), Root Cause Failure Analysis (RCFA), Gas Conditioning & Process Technology, Production Safety and Delusion of Asphalt. Currently, he is the Operations Consultant & the Technical Advisor at GEOTECH and an independent Drilling Operations Consultant of various engineering services providers to the international clients as he offers his expertise in many areas of the drilling & petroleum discipline and is well recognized & respected for his process and procedural expertise as well as ongoing participation, interest and experience in continuing to promote technology to producers around the world.

Throughout his long career life, Dr. Chris has worked for many international companies and has spent several years **managing technically complex wellbore interventions** in both **drilling & servicing**. He is a **well-regarded** for his **process and procedural expertise**. Further, he was the **Operations Manager at ETP Crude Oil Pipeline Services** where he was fully responsible for optimum operations of crude oil pipeline, **workover and directional drilling, drilling rigs** and equipment, drilling of various geothermal deep wells and **exploration wells**. Dr. Chris was the **Drilling & Workover Manager & Superintendent for Kavala Oil** wherein he was responsible for supervision of **drilling operations and offshore exploration**, quality control of performance of **rigs, coiled tubing**, crude oil transportation via pipeline and abandonment of **well** as per the API requirements. He had occupied various key positions as the **Drilling Operations Consultant, Site Manager, Branch Manager, Senior Drilling & Workover Manager & Engineer and Drilling & Workover Engineer, Operations Consultant, Technical Advisor** in several petroleum companies responsible mainly on an **offshore sour oil field (under water flood and gas lift)** and a gas field. Further, Dr. Chris has been a **Professor of the Oil Technology College**.

Dr. Chris has **PhD in Reservoir Engineering** and a **Master's degree in Drilling & Production Engineering** from the **Petrol-Gaze Din Ploiesti University**. Further, he is a **Certified Surfaced BOP Stack Supervisor of IWCF**, a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM)** and has conducted **numerous short courses, seminars and workshops** and has published several technical books on **Production Logging, Safety Drilling Rigs and Oil Reservoir**.

Course Program

The following program is planned for this course. However, the course instructor 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 & Introductions
0815 – 0830	PRE-TEST
0830 – 0930	Fundamentals of Fluid Flow in Porous Media Diffusivity Equation • Initial & Boundary Conditions • Dimensionless Groups • Solutions to the Diffusivity Equation
0930 – 0945	Break
0945 – 1115	Fundamentals of Fluid Flow in Porous Media (cont'd) Superposition in Space • Superposition in Time • Deconvolution
1115 – 1230	Introduction to Flow & Buildup-Test Analysis: Slightly Compressible Fluids Analysis of Flow Tests • Analysis of Pressure-Buildup Tests • Complications in Actual Tests
1230 – 1245	Break
1245 – 1420	Introduction to Flow & Buildup-Test Analysis: Slightly Compressible Fluids (cont'd) Complications in Actual Tests • Analysis of Late-Time Data in Flow & Buildup Tests • Analyzing Well Tests with Multiphase Flow
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	Introduction to Flow & Buildup-Test Analysis: Slightly Compressible Fluids Pseudopressure & Pseudotime Analysis • Pressure & Pressure-Squared Analysis • Non-Darcy Flow
0930 – 0945	Break
0945 – 1115	Introduction to Flow & Buildup-Test Analysis: Slightly Compressible Fluids (cont'd) Analysis of Gas-Well Flow Tests • Analysis of Gas-Well Buildup Tests
1115 – 1215	Well-Test Analysis by Use of Type Curves Development of Type Curves • Application of Type Curves- Homogeneous Reservoir Model, Compressible Fluids • Correcting Initial Pressure in a Well Test
1215 – 1230	Break
1230 – 1420	Well-Test Analysis by Use of Type Curves (cont'd) Reservoir Identification with Type Curves • Systematic Analysis Procedures for Flow and Buildup Tests • Well-Test-Analysis Worksheets
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Analysis of Pressure-Buildup Distorted by Phase Redistribution Description of Phase Redistribution • Phase-Redistribution Model • Analysis Procedure
0930 – 0945	Break
0945 -1115	Well-Test Interpretation in Hydraulically Fractured Wells Flow Patterns in Hydraulically Fractured Wells • Flow Geometry and Depth of Investigation of a Vertically Fractured Well
1115 – 1215	Well-Test Interpretation in Hydraulically Fractured Wells (cont'd) Specialized Methods for Post-Fracture Well-Test Analysis • Post-Fracture Well-Test Analysis with Type Curves • Effects of Fracture and Formation Damage
1215 – 1230	Break
1230 – 1420	Interpretation of Well-Test Data in Naturally Fractured Reservoirs Naturally Fractured Reservoir Models • Pseudosteady-State Matrix Flow Model • Transient Matrix Flow Model
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Drillstem Testing & Analysis Conventional DST • Conventional DST Design • DST-Monitoring Procedures • DST Analysis Techniques • Closed-Chamber DST • Impulse Testing
0930 – 0945	Break
0945 – 1115	Injection-Well Testing Injectivity Testing in a Liquid-Filled Reservoir: Unit-Mobility-Ratio Reservoir Conditions • Falloff Testing in a Liquid-Filled Reservoir: Unit-Mobility-Ratio Reservoir Conditions
1115 – 1215	Injection-Well Testing (cont'd) Estimating Average Drainage-Area Pressure • Composite-System-Test Analysis for Nonunit-Mobility-Ratio Reservoir Conditions • Step-Rate Testing
1215 – 1230	Break
1230 – 1420	Interferences & Pulse Testing Interferences Tests • Pulse Tests • Recommendations for Multiple-Well Testing
1420 – 1430	Recap
1430	Lunch & End of Day Four

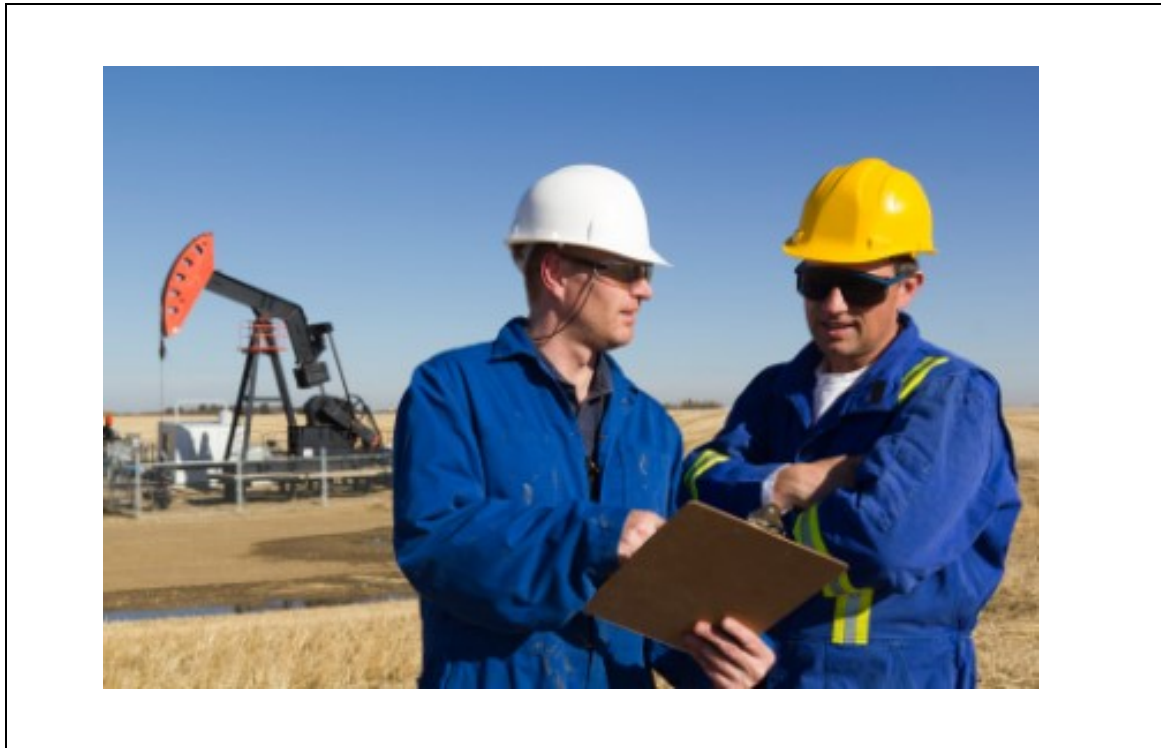
Day 5

0730 – 0930	Design & Implementation of Well Tests Types & Purposes of Well Tests • General Test-Design Considerations • Pressure Transient Test Design • Deliverability-Test Design
0930 – 0945	Break
0945 – 1100	Horizontal Well Analysis Field Examples • Running Horizontal Well Tests • Estimating Horizontal Well Tests • Comparison of Recent & Older Horizontal Well Models

1100 – 1215	Horizontal Well Analysis (cont'd) <i>Field Examples • Running Horizontal Well Tests • Estimating Horizontal Well Tests • Comparison of Recent & Older Horizontal Well Models</i>
1215 – 1230	<i>Break</i>
1230 – 1345	General Discussion
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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