COURSE OVERVIEW FE0065
Plan, Conduct & Monitoring Pigging Activities

Course Title
Plan, Conduct and Monitoring Pigging Activities

Course Date/Venue
September 08-12, 2024/Switzerland, Europe

Course Reference
FE0065

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.

This course is designed to provide participants with a detailed and up-to-date overview of Plan, Conduct & Monitoring Pigging Activities. It covers the components and types of pipeline systems; the importance of pigging in maintaining pipeline integrity; the types of pigging and their applications covering utility pigs, cleaning pigs, gauging pigs, and intelligent pigs; the potential hazards and safety protocols in pigging; and the basic pigging operations and procedures.

Further, the course will also discuss the pipeline design and pig compatibility; the pre-pigging inspections, assessments and planning pigging operations; selecting pigs based on pipeline conditions; the risk assessment and mitigation; the systematic procedures and best practices in launching and receiving pigs; and monitoring pigging operations, troubleshooting common pigging issues, using supporting equipment and performing proper record keeping and documentation.

During this interactive course, participants will learn to inspect and clean recovered pigs and interpret data collected by intelligent pigs; evaluate the effectiveness of pigging and tailor maintenance strategies based on pigging results; implement effective methods for reporting and communicating results; interpret the latest developments in pig design and functionality; handle difficult pigging scenarios and integrate pigging with other maintenance practices; and explain the regulatory and environmental considerations and the future trends in pipeline pigging.

Course Objectives

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

- Plan, conduct and monitor pigging activities in a professional manner
- Identify the components and types of pipeline systems and discuss the importance of pigging in maintaining pipeline integrity
- Recognize the types of pigs and their applications covering utility pigs, cleaning pigs, gauging pigs, and intelligent pigs
- Identify potential hazards and safety protocols in pigging and apply basic pigging operations and procedures
- Analyze pipeline design and pig compatibility as well as carryout pre-pigging inspections and assessments
- Plan pigging operations, select pigs based on pipeline conditions and apply risk assessment and mitigation
- Implement systematic procedures and best practices in launching and receiving pigs
- Monitor pigging operations, troubleshoot common pigging issues, use supporting equipment and perform proper record keeping and documentation
- Inspect and clean recovered pigs and interpret data collected by intelligent pigs
- Evaluate the effectiveness of pigging and tailor maintenance strategies based on pigging results
- Implement effective methods for reporting and communicating results and discuss the latest developments in pig design and functionality
- Handle difficult pigging scenarios and integrate pigging with other maintenance practices
- Discuss regulatory and environmental considerations and the future trends in pipeline pigging

Who Should Attend

This course provides an overview of all significant aspects and considerations of planning, conducting and monitoring pigging activities for pipeline operations managers, pipeline engineers, quality assurance inspectors, maintenance supervisors and pigging technicians and operators.

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. John Petrus, PhD, MSc, BSc, is a **Senior Engineer** with over **30 years** of **onshore & offshore** experience within the **Oil & Gas**, **Refinery** and **Petroleum** industries. His wide experience covers in the areas of **Pipeline Pigging**, **Pipeline Pigging & Intelligent**, **Pigging Foundations**, **Pipeline Pigging, In-Line Inspection & Integrity Assessment**, **Piping & Pipe** Support Systems, **Piping** Systems & Process Equipment, **Piping** System Repair & Maintenance, **Piping** Integrity Management, **Pipeline** Operation & Maintenance, **Pipeline** Design & Construction, **Pipeline** Repair Methods, **Pipeline** Engineering, Pipeline Integrity Management System (**PIMS**), **De-Sulfurization** Technology, **Process Troubleshooting**, **Distillation Towers**, **Fundamentals of Distillation** for Engineers, **Distillation** Operation and Troubleshooting, **Advanced Distillation** Troubleshooting, **Distillation** Technology, Vacuum **Distillation**, **Distillation Column** Operation & Control, **Oil Movement** Storage & Troubleshooting, **Process Equipment** Design, Applied **Process Engineering** Elements, **Process Plant** Optimization, **Oil & Gas Field Commissioning** Techniques, **Pressure Vessel** Operation, **Gas Processing**, **Chemical** Engineering, **Process Reactors** Start-Up & Shutdown, **Gasoline Blending** for Refineries, **Urea Manufacturing** Process Technology, Continuous Catalytic Reformer (**CCR**), Advanced Operational & Troubleshooting Skills, **Rotating Equipment** Selection, Operation, Maintenance, Inspection & Troubleshooting, **Rotating Machine/Equipment** in Industry, **Control Valves & Actuators**, **PSV** Maintenance & Testing, **Pump Selection**, Installation, Performance & Control, **Screw Compressor** Theory and Troubleshooting, **Reliability-Centered Maintenance** (**RCM**), **Preventive & Predictive Maintenance**, **Spare Parts Planning & Inventory** Management, Computerized Maintenance Management Systems (**CMMS**), **Process Plant Shutdown & Turnaround**, **Maintenance Optimization** & Best Practices, **Reliability Centered Maintenance** Principles & Application, Efficient Shutdowns, Turnaround & Outages, Effective Reliability Maintenance & Superior Maintenance Strategies, **Integrity & Asset** Management, **Total Plant Reliability** Maintenance, **Vibration** Measurement, **Advanced Analytics** in Oil & Gas, **Business Intelligence Data Analytics**, Audit Analytics & Computer-Assisted Audit Techniques (**CAATs**), **Basic Database** Concepts & Data Formats, **Data Analysis** Cycle & Best Practices, **Data Importing & Integrity** Verification, **Advanced Analytics Tools** in **Auditing**, Leveraging **AI & Machine Learning** in **Audits**, **Data Mining Techniques** for Auditors, **Data Analytics** for Managerial Decision Making, **Business Process Analysis**, Mapping & Modeling, **Research Methods & Analysis**, **Statistical Data Needs Analysis**, **GIS System** Management, **Database** Management, Strategic Planning, Best Practices and Workflow, **Quality** Management, **Project** Management and **Risk Assessment** & Uncertainty Evaluation. Further, he is also well-versed in **seismic interpretation**, **mapping** & **reservoir modelling tools** like **Petrel** software, **LandMark**, **Seisworks**, **Geoframe**, **Zmap** and has extensive knowledge in MSDos, Unix, **AutoCAD**, MAP, Overlay, Quicksurf, 3DStudio, **Esri ArcGIS**, Visual Lisp, Fortran-77 and Clipper. Moreover, he is a world **expert** in **analysis** and **modelling** of **fractured prospects** and **reservoirs** and a **specialist** and **developer** of **fracture modelling software tools** such as FPDM, FMX and DMX Protocols.

During his career life, Dr. Petrus held significant positions and dedication as the **Executive Director**, **Senior Geoscience Advisor**, **Exploration Manager**, **Project Manager**, **Manager**, **Process Engineer**, **Mechanical Engineer**, **Maintenance Engineer**, **Chief Geologist**, **Chief** of **Exploration**, **Chief** of **Geoscience**, **Senior Geosciences Engineer**, **Senior Explorationist**, **Senior Geologist**, **Geologist**, **Senior Geoscientist**, **Geomodeller**, **Geoscientist**, **CPR Editor**, **Resources Auditor**, **Project Leader**, **Technical Leader**, **Team Leader**, **Scientific Researcher** and **Senior Instructor/Trainer** from various international companies and universities such as the Dragon Oil Holding Plc., ENOC, MENA, ENI Group of Companies, Ocre Geoscience Services (OGS), Burren RPL, Ministry of Oil-Iraq, Eni Corporate University, Standford University, European Universities, European Research Institutes, NorskHydro Oil Company, Oil E&P Companies, just to name a few.

Dr. Petrus has a **PhD** in **Geology** and **Tectonophysics** and **Master** and **Bachelor** degrees in **Earth Sciences** from the **Utrecht University**, **The Netherlands**. Further, he is a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**), a Secretary and Treasurer of Board of Directors of Multicultural Centre, Association Steunfonds SSH/SSR and Founding Member of Sfera Association. He has further published several scientific publications, journals, research papers and books and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

Course Fee

US$ 12,500 per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), 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 workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Sunday, 08th of September 2024***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Introduction to Pipeline Systems:*** *Understanding the Components & Types of Pipeline Systems*
0900 – 0930	***Overview of Pigging & its Importance****: Definition, Purposes, & Benefits of Pigging in Maintaining Pipeline Integrity*
0930 – 0945	*Break*
0945 – 1045	***Types of Pigs & their Applications:*** *Utility Pigs, Cleaning Pigs, Gauging Pigs, & Intelligent Pigs*
1045 – 1145	***Safety Considerations in Pigging:*** *Identifying Potential Hazards & Safety Protocols*
1145 - 1230	***Basic Pigging Operations & Procedures:*** *General Steps & Best Practices*
1230 - 1245	*Break*
1245 – 1420	***Case Studies****: Real-World Examples of Successful Pigging Operations*
1420 - 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 09th of September 2024***

0730 – 0830	***Pipeline Design & Pig Compatibility:*** *Analyzing Pipeline Features that Affect Pig Selection*
0830 – 0930	***Pre-Pigging Inspections & Assessments:*** *Techniques & Tools for Assessing Pipeline Conditions*
0930 – 0945	*Break*
0945 – 1045	***Planning Pigging Operations:*** *Steps in Developing a Pigging Plan Including Timeline & Resource Allocation*
1045 – 1145	***Selection of Pigs Based on Pipeline Conditions:*** *Criteria for Selecting the Appropriate Pig Type*
1145 - 1230	***Risk Assessment & Mitigation:*** *Identifying & Mitigating Risks Associated with Pigging*
1230 – 1245	*Break*
1245 – 1420	***Workshop:*** *Participants Create a Pigging Plan Based on a Given Scenario*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 10th of September 2024

0730 – 0830	***Launching & Receiving Pigs:*** *Detailed Procedures & Best Practices*
0830 – 0930	***Monitoring Pigging Operations:*** *Techniques for Real-Time Monitoring & Data Acquisition*
0930 – 0945	*Break*
0945 – 1045	***Troubleshooting Common Pigging Issues:*** *Identifying & Resolving Common Operational Challenges*
1045 – 1145	***Use of Supporting Equipment:*** *Operational Roles of Bypass Tools, Tracking Systems, & Pressure Control*
1145 - 1230	***Record Keeping & Documentation:*** *Importance & Methods of Maintaining Accurate Records*
1230 – 1245	*Break*
1245 – 1420	***Interactive Session:*** *Hands-On Practice with Pigging Equipment in a Controlled Environment*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 11th of September 2024

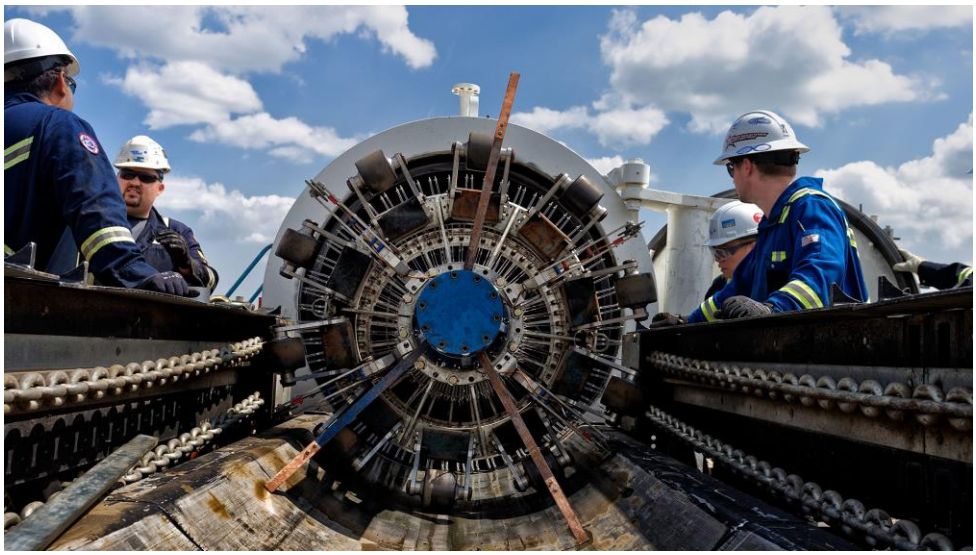
0730 – 0830	***Inspection & Cleaning of Recovered Pigs****: Procedures for Post-Operation Maintenance*
0830 – 0930	***Analysis of Pigging Data:*** *Techniques for Interpreting Data Collected by Intelligent Pigs*
0930 – 0945	*Break*
0945 – 1045	***Evaluating the Effectiveness of Pigging:*** *Metrics & Benchmarks for Assessment*
1045 – 1145	***Maintenance Recommendations Based on Findings****: Tailoring Maintenance Strategies Based on Pigging Results*
1145 - 1230	***Reporting & Communicating Results:*** *Effective Methods for Reporting to Stakeholders*
1230 – 1245	*Break*
1245 – 1420	***Group Discussion:*** *Review of Case Studies with Emphasis on Post-Pigging Analysis*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: Thursday, 12th of September 2024

0730 – 0830	***Advanced Pigging Technologies:*** *Latest Developments in Pig Design & Functionality*
0830 – 0930	***Challenges in High-Risk or Unpiggable Pipelines:*** *Strategies for Handling Difficult Pigging Scenarios*
0930 – 0945	*Break*
0945 – 1100	***Integrating Pigging with other Maintenance Practices:*** *How Pigging Fits in to Comprehensive Pipeline Maintenance*
1100 - 1230	***Regulatory & Environmental Considerations:*** *Understanding Compliance with Laws & Regulations*
1230 - 1245	*Break*
1245 1345	***Future Trends in Pipeline Pigging:*** *Innovations & Predictions for the Industry.*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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



Course Coordinator

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