COURSE OVERVIEW ME1109
Hydro Jetting Machine

Course Title
Hydro Jetting Machine

Course Date/Venue
Session 1: June 16-20, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: November 23-27, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
ME01109

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.

This course is designed to provide participants with a detailed and up-to-date overview of Hydro Jetting Machine. It covers the purpose and applications of hydro jetting; the components of a hydro jetting machine; the water pressure and flow rates, safety fundamentals, machine setup and pre-operation checks; the water discharge and debris, dispose waste materials, environmental impact and local regulations; the nozzle selection, cleaning techniques and patterns; the safety precautions for confined areas and monitoring gas levels and potential hazards; and the appropriate accessories for confined space cleaning.

During this interactive course, participants will learn the high-pressure hoses, routine maintenance and diagnosing machine issues; the repair and replacement techniques, preventive maintenance planning, calibration and testing; the safety review, troubleshooting practice and advanced cleaning techniques; cleaning tanks and storage vessels, removing scale and corrosion from equipment and identifying job-specific requirements; and the hydro jetting for plumbing applications, efficiency and productivity optimization and environmental and regulatory compliance.

Course Objectives

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

- Apply and gain an in-depth knowledge on hydro jetting machine
- Discuss the purpose of hydro jetting and its applications in various industries
- Identify the components of a hydro jetting machine covering high-pressure pump, nozzles, hoses and control systems and gauges
- Explain water pressure and flow rates, safety fundamentals and machine setup and pre-operation checks
- Manage water discharge and debris, dispose waste materials, minimize environmental impact and comply with local regulations
- Start and stop the machine and apply nozzle selection, cleaning techniques and patterns
- Carryout safety precautions for confined areas, monitor gas levels and potential hazards and use appropriate accessories for confined space cleaning
- Handle high-pressure hoses, apply routine maintenance and diagnose machine issues
- Employ repair and replacement techniques, preventive maintenance planning, calibration and testing
- Apply safety review and troubleshooting practice and advanced cleaning techniques
- Clean tanks and storage vessels, remove scale and corrosion from equipment and identify job-specific requirements
- Carryout hydro jetting for plumbing applications, efficiency and productivity optimization and environmental and regulatory compliance

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 an overview of all significant aspects and considerations of hydro jetting machine for maintenance technicians and operators, industrial cleaning specialists, oil and gas workers, facility and plant engineers, construction and infrastructure professionals, safety and environmental officers, municipal and utility workers, regulatory and compliance professionals and other technical staff.

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: -

- 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.

- 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:

Mr. Kyle Bester is a **Senior Mechanical & Maintenance Engineer** with extensive years of practical experience within the **Oil & Gas**, **Power & Water Utilities** and other **Energy** sectors. His expertise widely covers in the areas of **Machinery Vibration** Monitoring, **Vibration** Measurement, **Machinery Failure** Analysis, **Vibration & Predictive** Maintenance, **Machinery Diagnostics & Root Cause** Failure Analysis, **Alignment & Leveling**, **Laser Alignment**, **Coupling & Shaft Alignment** Techniques, **Alignment** Techniques, **Mechanical Shaft Alignment & Vibrational** Analysis, **Laser & Dial-Indicator** Techniques, **Mitsubishi & Honeywell HVAC Building Management Systems** (**BMS**), **HVAC & Refrigeration** Systems, **HVAC** System Monitoring, Preventive Maintenance Scheduling, **HVAC** Units Fault Detection, **Energy** Efficiency Optimization, **Mitsubishi HVAC** Operations, **Load** Balancing Techniques, **Steam Boilers & Oil Combustion**, **Utility Boilers**, **Commercial HVAC Controls & DDC**, **Air Conditioning & Refrigeration**, Modern Heating, Ventilation, Air-Conditioning (**HVAC**) **& Refrigeration** Systems, **Gas Turbine** Maintenance & Troubleshooting, **Safety Relief Valve** Sizing & Testing, **PRV & POPRV/PORV**, **Bearing & Bearing** Failure Analysis, **Pumps & Valves** Maintenance, Coupling, Gear Boxes, Bearings & Lubrication, Mechanical Seals, **Pressure Vessel** Design & Analysis, **Steam & Gas Turbine**, **High Pressure Boiler** Operation, **Compressors** Operation & Maintenance, **Tank** Design, Construction, Inspection & Maintenance, **Tank & Tank Farms**, **Hydraulic** Modelling, Advanced Surface Storage Facilities & **Pipeline** Networks, **Process Design & Engineering**, **Piping Control Loops & Heat Exchangers**, Safe **Process Units Start-Up/Shutdown**, **Reliability & Asset Management** Technology Best Practices, Condition Monitoring System of **Rotary Machines**, **Data Analysis** Techniques, **Maintenance Planning & Scheduling**, **Maintenance Shutdown & Turnaround**, **Maintenance Audit** Best Practices, **Maintenance & Reliability** Management, Reliability, Availability & Maintainability (**RAM**), **Root Cause** Analysis and **Reliability-Centered Maintenance** (**RCM**). Further, he is also well-versed in **Water Treatment & Reverse Osmosis** Units, **Water Resources** Management & Policies, **Water** Network Systems & Pumping Stations, **Waste Water Effluent** Treating Facilities, Best Practice in **Sewage & Industrial Waste Water** Treatment & Environmental Protection, **Oil Refinery & Petrochemical Industry Wastewater** Treatment & Operation, **Water Network** Optimization Strategy, **Water Network** Operation & Maintenance and **Chlorination** System.

During his career life, Mr. Bester has gained his practical and field experience through his various significant positions and dedication as the **Project Manager**, **Asset Manager**, **Water Engineer**, **Maintenance Engineer**, **Mechanical Engineer**, **Process Engineer**, **Supervisor**, **Team Leader**, **Analyst**, **Utility Field Supervisor**, **HVAC & Building Controls Supervisor**, **Field HVAC Technician**, **Process Technician**, **Landscape Designer** and **Senior Instructor/Trainer** for various international companies, infrastructures, water and wastewater treatment plants from New Zealand, UK, Samoa, Zimbabwe and South Africa, just to name a few.

Mr. Bester holds a **Diploma** in **Wastewater Treatment** and a **National Certificate** in **Wastewater & Water Treatment**. Further, he is a **Certified Instructor/Trainer**, an **Approved Chemical Handler** and has delivered numerous courses, trainings, conferences, seminars and workshops internationally.

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.

Accommodation

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

Course Fee

US$ 5,500 per Delegate + **VAT**. 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 workshop 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	***Overview of Hydro Jetting Technology*** *Definition and Purpose of Hydro Jetting • Applications in Various Industries (Construction, Plumbing, etc.) • Types of Hydro Jetting Machines • Comparison with Other Cleaning Methods*
0930 – 0945	*Break*
0945 – 1030	***Components of a Hydro Jetting Machine*** *High-Pressure Pump • Nozzles and Their Types • Hoses: Materials and Ratings • Control Systems and Gauges*
1030 – 1215	***Understanding Water Pressure & Flow Rates*** *PSI (Pounds per Square Inch) and GPM (Gallons per Minute) Basics • Relationship Between Pressure, Flow and Cleaning Power • Calculating Water Requirements • Importance of Balancing Pressure and Flow*
1215 – 1230	*Break*
1230 – 1330	***Safety Fundamentals*** *PPE Requirements (Helmets, Gloves, Goggles, etc.) • Hazard Identification (High-Pressure Water, Flying Debris) • Emergency Shut-Off Procedures • Lockout/Tagout (LOTO) System*

1330 – 1420	***Machine Setup & Pre-Operation Checks*** *Checking Water Supply Connections • Inspecting Hoses and Nozzles for Wear • Priming the Pump and Calibrating Pressure Gauges • Ensuring the Work Area Is Safe*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Environmental Considerations*** *Managing Water Discharge and Debris • Disposal of Waste Materials • Minimizing Environmental Impact • Complying with Local Regulations*
0830 – 0930	***Starting & Stopping the Machine*** *Step-by-Step Start-up Procedure • Adjusting Pressure and Flow Rates • Controlled Shutdown Techniques • Troubleshooting Common Start-up Issues*
0930 – 0945	*Break*
0945 – 1100	***Nozzle Selection & Usage*** *Types of Nozzles (Rotary, Fan, etc.) • Matching Nozzles to Cleaning Tasks • Proper Installation of Nozzles • Maintaining Nozzle Condition*
1100 – 1215	***Cleaning Techniques & Patterns*** *Horizontal versus Vertical Cleaning • Using the Correct Distance and Angle • Overlapping Patterns for Thorough Cleaning • Handling Stubborn Debris*
1215 – 1230	*Break*
1230 – 1420	***Working in Confined Spaces*** *Safety Precautions for Confined Areas • Ventilation and Lighting Requirements • Monitoring Gas Levels and Potential Hazards • Using Appropriate Accessories for Confined Space Cleaning*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Handling High-Pressure Hoses*** *Best Practices for Hose Maneuverability • Avoiding Kinks and Damage • Securing Hoses during Operation • Inspection and Maintenance of Hoses*
0830 – 0930	***Safety Drills & Scenarios*** *Simulating Emergencies (Hose Burst, Nozzle Failure) • Correct Response to Pressure Surges • Role-Playing Evacuation Procedures • Evaluating Team Response Times*
0930 – 0945	*Break*
0945 – 1100	***Routine Maintenance*** *Daily Pre- and Post-Operation Checks • Cleaning Filters and Strainers • Lubricating Machine Components • Maintaining Pressure Gauges*
1100 – 1215	***Diagnosing Machine Issues*** *Identifying Common Problems (Low Pressure, Leaks) • Interpreting Warning Indicators • Testing Individual Components for Faults • Using Diagnostic Tools*

1215 – 1230	*Break*
1230 – 1330	***Repair & Replacement Techniques*** *Replacing Worn-out Hoses and Nozzles • Servicing Pumps and Motors • Repairing Leaks in Fittings and Seals • Ensuring Compatibility of Replacement Parts*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Preventive Maintenance Planning*** *Scheduling Regular Inspections • Keeping Maintenance Logs • Stocking Essential Spare Parts • Extending Machine Lifespan Through Proper Care*
0830 – 0930	***Calibration & Testing*** *Calibrating Pressure and Flow Settings • Testing Nozzle Spray Patterns • Verifying Water Supply and Quality • Simulating Real-World Scenarios*
0930 – 0945	*Break*
0945 – 1100	***Safety Review & Troubleshooting Practice*** *Review of Previous Safety Drills • Identifying Gaps in Safety Procedures • Hands-on Troubleshooting Exercises • Feedback and Improvement Planning*
1100 – 1215	***Advanced Cleaning Techniques*** *Debris Removal from Pipelines • Surface Preparation for Coating or Painting • Cleaning Delicate Surfaces (Stone, Tiles, etc.) • Dealing with Thick or Hardened Materials*
1215 – 1230	*Break*
1230 – 1420	***Hydro Jetting for Industrial Use*** *Applications in Petrochemical Plants • Cleaning Tanks and Storage Vessels • Removing Scale and Corrosion from Equipment • Understanding Job-Specific Requirements*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Hydro Jetting for Plumbing Applications*** *Clearing Clogged Drains • Removing Tree Roots from Pipes • Maintenance of Sewer Lines • Avoiding Damage to Plumbing Systems*
0830 – 0930	***Specialized Equipment & Accessories*** *Robotic Hydro Jetting Machines • Use of Extension Wands • Abrasive Jetting Tools • Attachments for Specific Applications*
0930 – 0945	*Break*
0945 – 1100	***Efficiency & Productivity Optimization*** *Minimizing Downtime • Team Coordination during Operations • Reducing Water and Energy Consumption • Maximizing Cleaning Efficiency*

1100 – 1215	***Environmental & Regulatory Compliance*** *Managing Water Discharge Permits • Complying with Noise Level Regulations • Handling Hazardous Materials Safely • Record-Keeping for Audits and Inspections*
1215 – 1230	*Break*
1230 – 1345	***Feedback & Improvement Recommendations*** *Trainer Observations and Insights • Peer and Self-Assessment • Identifying Areas for Improvement • Developing a Personal Action Plan*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about t Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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

Course Coordinator

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