MERCURY

Pipe Fabrication and Fitting in the Oil & Gas Industry

4 – 15 April 2027
Dubai (UAE)



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Ref: 15830_329685 **Date:** 4 – 15 April 2027 **Location:** Dubai (UAE) **Fees:** 8500 Euro

Introduction:

Pipe fabrication and fitting are crucial in the oil and gas industry. They are essential for constructing pipelines transporting oil, gas, and other fluids across vast distances. The Pipe Fabrication and Fitting in the Oil and Gas Industry course involves various complex techniques to ensure pipes are accurately fabricated, joined, and installed to withstand high-pressure, high-temperature environments.

With strict industry regulations and safety standards, pipe fabrication and fitting require high precision and expertise. This Pipe Fabrication and Fitting in the Oil and Gas Industry training will equip professionals with the skills and knowledge to work effectively in the demanding oil and gas sector, from material selection to installing and maintaining pipe systems.

The Pipe Fabrication and Fitting in the Oil and Gas Industry course provides skills and knowledge for pipe fitting and fabrication in this field. Participants will learn what a pipe fitting is and gain a clear definition, covering the types of pipe fittings in the oil and gas industry. It delves into pipe fittings for the oil and gas industry, their applications, and the tools for pipe fitting required for precise installation.

This Pipe Fabrication and Fitting in the Oil and Gas Industry training attendees will understand the meaning and explore the pipe fabrication standards and process with practical insights. They will receive hands-on experience with pipe fabrication tools and equipment to meet industry requirements. Whether new to the field or looking to enhance their expertise, it equips them with the skills for pipe fitting oil and gas and mastering oil and gas pipe fabrication.

Targeted Groups:

- Engineers working in the oil and gas industry.
- Technicians involved in pipe fabrication and installation.
- Project managers are overseeing pipeline construction projects.
- Welders and fitters specializing in pipe systems.
- Maintenance professionals for pipeline systems.
- Quality control inspectors in pipeline fabrication.
- Safety officers managing pipeline construction sites.
- Contractors and sub-contractors in the oil and gas industry.
- Designers and draftsmen involved in pipeline projects.
- Consultants and advisors in the oil and gas sector.

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Course Objectives:

At the end of this Pipe Fabrication and Fitting in the Oil and Gas Industry course, the participants will be able to:

- Understand key pipe fabrication and fitting concepts in the oil and gas industry.
- Gain knowledge about materials, pipes, and fittings used in the industry.
- Learn the different methods of pipe joining, including welding and threading.
- Develop skills in reading and interpreting pipe system blueprints.
- Understand the importance of safety standards and regulations in pipe fabrication.
- Learn to apply quality control and inspection techniques for pipeline systems.
- Develop the ability to design and plan pipe layouts efficiently.
- Understand testing and commissioning processes for newly fabricated pipe systems.
- Gain an understanding of pipe maintenance practices and their significance.
- Be prepared to troubleshoot common issues in pipe systems and implement solutions.

Targeted Competencies:

By the end of this Pipe Fabrication and Fitting in the Oil and Gas Industry training, the participants competencies will:

- Knowledge of various pipe materials and their applications.
- Proficiency in pipe fitting and welding techniques.
- Ability to read and interpret pipeline blueprints and schematics.
- Understanding of pipe installation and testing procedures.
- Expertise in quality control and inspection methods.
- Safety management skills for pipeline construction and maintenance.
- Competence in planning and scheduling pipe-laying projects.
- Familiarity with industry standards and codes for pipe fabrication.
- Capability to troubleshoot and maintain pipe systems.
- Skill in handling specialized tools and equipment for pipe fabrication.

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Course Content:

Unit 1: Introduction to Pipe Fabrication and Fitting:

- Overview of pipe fabrication in oil and gas.
- Key components of pipeline systems.
- Different industries use pipe fabrication techniques.
- Overview of industry standards and codes ASME, ASTM, API.
- Role of pipe fabrication in the oil and gas supply chain.

Unit 2: Pipe Materials and Fittings:

- Classification of pipe materials carbon steel, stainless steel, alloy steel.
- Selection criteria for pipe materials in oil and gas.
- Overview of different fittings elbows, tees, reducers, flanges.
- Material compatibility and corrosion resistance.
- Industry-specific material standards and certifications.

Unit 3: Pipe Joining Methods and Techniques:

- Welding techniques: TIG, MIG, Stick welding.
- Overview of threaded joints, flanged joints, and mechanical joints.
- Advantages and disadvantages of each pipe joining method.
- Introduction to heat treatment processes in pipe welding.
- Understanding of welding symbols and techniques for pipe systems.

Unit 4: Blueprint Reading and Pipe Layout Design:

- Introduction to blueprint reading for pipe systems.
- Key symbols, terminology, and specifications in pipe layouts.
- How to design an efficient pipe layout for oil and gas installations.
- Planning for pipe stress, vibration, and thermal expansion.
- Importance of pipe alignment and geometric accuracy.

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Unit 5: Pipe Fabrication Techniques:

- Pipe cutting and bending tools and techniques.
- Procedures for shaping and fitting pipes.
- Managing fabrication tolerances and dimensions.
- Use of CAD software in pipe fabrication design.
- Role of digital tools in improving fabrication precision.

Unit 6: Safety Standards and Best Practices in Pipe Fabrication:

- Health, safety, and environmental standards for pipeline work.
- Personal protective equipment PPE for pipe fabrication and installation.
- Identification and mitigation of risks in pipeline construction.
- Emergency response protocols on construction sites.
- Compliance with international safety standards in oil and gas.

Unit 7: Quality Control and Inspection in Pipe Fabrication:

- Introduction to QA/QC in pipe fabrication.
- Inspection techniques: visual, ultrasonic, and radiographic.
- Handling defects: common fabrication issues and corrective actions.
- Importance of documentation and certification in quality control.
- Role of third-party inspection in the oil and gas industry.

Unit 8: Pipe Installation Techniques and Procedures:

- Installation procedures for different pipe materials and sizes.
- Handling and transport of pipe sections to the site.
- Techniques for joint alignment and fitting installation.
- Safety measures during the installation of large-scale pipelines.
- Understanding of hydraulic and pneumatic systems in pipe installation.

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Unit 9: Pipe System Testing and Commissioning:

- Methods of testing: hydrostatic, pneumatic, and leak detection.
- Procedures for commissioning pipe systems.
- Preparing newly installed pipes for operation.
- Handling commissioning documentation and certificates.
- Post-installation checks and system turnover protocols.

Unit 10: Maintenance, Troubleshooting, and Repairs of Pipe Systems:

- Regular maintenance practices for pipeline systems.
- Identification of common problems: leaks, corrosion, wear.
- Best practices for troubleshooting and repairs in the field.
- Strategies for pipe replacement and system upgrades.
- Use of corrosion inhibitors and maintenance chemicals in pipelines.