Effective Pipeline Integrity and Corrosion Control Training Course

18 - 22 May 2026

Brussels

4400 € (Per Person)

Ref: #OG1468_504239

Course Introduction / Overview:

The safety and reliability of pipelines are critical for the energy and water sectors, making effective pipeline integrity management and corrosion control paramount. As a leading issue, corrosion threatens the operational lifespan of pipeline assets and can lead to costly failures, environmental damage, and safety hazards. This comprehensive training course, offered by BIG BEN Training Center, is designed to provide professionals with the knowledge and practical skills needed to implement robust integrity programs. The curriculum addresses all aspects of pipeline management, from fundamental corrosion mechanisms and inspection techniques to advanced risk assessment and repair methods. This program highlights the importance of proactive strategies, helping companies move from reactive maintenance to preventative integrity management. We incorporate insights from renowned experts, like Reza Javaherdashti and his book Corrosion and Materials in the Pipeline Industry, to give participants a solid academic and practical foundation. The course also covers regulatory compliance and the latest industry standards, ensuring participants are up to date on best practices.

Target Audience / This training course is suitable for:

- Pipeline engineers and technicians.
- Corrosion and integrity managers.
- Operations and maintenance personnel.
- Project managers in the oil, gas, and water sectors.
- Regulatory compliance officers.
- Asset and reliability engineers.
- Inspectors and quality assurance professionals.

Target Sectors and Industries:

- Oil and gas exploration and transportation.
- Water and wastewater utilities.
- Chemical and petrochemical manufacturing.
- Power generation and utilities.
- Government agencies and regulatory bodies.
- Construction and infrastructure.
- Consulting and engineering services.

Target Organizations Departments:

- Pipeline integrity and asset management.
- Operations and maintenance.
- Health, safety, and environment (HSE).
- Engineering and design.
- Quality assurance and control.
- Risk management.
- Compliance.

Course Offerings:

By the end of this course, the participants will have able to:

- Identify and analyze various corrosion mechanisms in pipelines.
- Implement effective internal and external corrosion control methods.
- Select appropriate materials for pipeline construction.
- Apply advanced inspection and monitoring technologies.
- Conduct risk and reliability assessments for pipeline assets.
- Develop a comprehensive pipeline integrity management system (PIMS).
- Formulate repair strategies for pipeline defects and damage.

Course Methodology:

This training course uses a hands-on, interactive approach to ensure that participants not only understand the theory of pipeline integrity but can also apply it to their work. Our methods include a mix of in-depth lectures and practical workshops that focus on real-world scenarios. We use detailed case studies of pipeline failures and integrity successes to illustrate key concepts and best practices. Participants will engage in group problem-solving exercises, where they will work together to assess simulated pipeline threats and develop mitigation plans. The course also includes a variety of interactive sessions where participants will have the opportunity to discuss challenges and share experiences with peers and our expert instructors. We will use a variety of tools, including risk assessment matrixes and integrity software demonstrations. Our program emphasizes practical skills, so participants can expect to leave with actionable knowledge. BIG BEN Training Center is committed to providing a learning experience that is both effective and directly applicable to the challenges faced by professionals in the field.

Course Agenda (Course Units):

Unit One: Introduction to Pipeline Integrity Fundamentals and Management Systems.

- The importance of pipeline integrity.
- Threats to pipeline integrity.
- Introduction to a Pipeline Integrity Management System (PIMS).
- Regulatory requirements and industry standards.
- The role of risk assessment in pipeline management.
- Lifecycle of a pipeline.
- Operational safety and environmental protection.

Unit Two: Principles of Corrosion Control Mechanisms and Mitigation.

- Understanding internal corrosion mechanisms.
- Understanding external corrosion mechanisms.
- Material selection for corrosion prevention.
- Cathodic protection systems: design and monitoring.
- Protective coatings and linings.
- Chemical inhibitors and corrosion management.
- Inspection technologies for corrosion detection.

Unit Three: Advanced Inspection and Monitoring Technologies and Applications.

- In-line inspection (ILI) technologies: PIGging.
- Non-destructive testing (NDT) methods.
- Monitoring external corrosion direct assessment (ECDA).
- Direct assessment for internal corrosion.
- Strain and leak detection systems.
- Data analysis and management.
- New and emerging inspection technologies.

Unit Four: Risk Assessment and Mitigation Proactive Management.

- Conducting a risk assessment for pipelines.
- Failure modes and effects analysis (FMEA).
- Prioritization of integrity activities.
- Developing repair strategies for defects.
- Pipeline rehabilitation and repair techniques.
- Pressure testing and smart PIGging.
- Emergency response planning.

Unit Five: Integrity Management Programs Implementation and Auditing.

- Developing a comprehensive PIMS program.
- Data collection and management.
- Key performance indicators (KPIs) for integrity.
- Auditing and continuous improvement.
- The role of human factors in integrity.
- Case studies in successful PIMS implementation.
- Future trends in pipeline integrity.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each day session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

Given the aging infrastructure of many global pipeline networks, how can the integration of new technologies and data analytics overcome the inherent limitations of traditional integrity management practices?

What unique qualities does this course offer compared to other courses?

This training course provides a comprehensive and practical deep dive into the dual challenges of pipeline integrity and corrosion control, which goes beyond standard training. We don't just present theory; we immerse you in real-world scenarios through detailed case studies and interactive workshops. Our curriculum is carefully structured to cover the entire lifecycle of a pipeline, from initial design and material selection to advanced inspection, repair, and ongoing risk management. The course places a strong emphasis on proactive strategies, helping participants to develop a robust Pipeline Integrity Management System (PIMS) that minimizes risks and extends asset life. By focusing on both established best practices and emerging technologies, such as advanced in-line inspection tools and data analytics, we ensure that participants are equipped with the most current knowledge. This program is designed to transform professionals from reactive problem-solvers into strategic asset managers, prepared to lead their organizations in safeguarding critical infrastructure.