

# Pipeline Engineering Programme

## Module MC01: Basics of Pipeline Engineering & Design Fundamentals



### Key Facts

- ✓ **Duration:** 1 week (5 teaching days)
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics or engineering recommended; none required

### Key Learning Outcomes

1. Understand pipeline development and key technological advances.
2. Identify pipeline types, components, and corresponding design requirements.
3. Compare the economic and strategic roles of pipelines with other transport modes.
4. Assess fluid properties to determine suitable designs and materials.
5. Apply the basics of system design, routing principles, and optimisation.
6. Demonstrate ethical, safe, and sustainable engineering practices.

### Module Overview

An intensive introduction to the design, construction, and operation of modern pipeline systems, covering their historical development, technological innovations, and international standards. The module explores pipeline classifications (transmission, distribution, flow lines), principal design considerations, including all major aspects, and the transport of diverse fluids such as oil, natural gas, water, hydrogen, and CO<sub>2</sub>. Economic and strategic roles of pipelines within global energy infrastructure are compared with alternative transport methods. Ethics, sustainability, and safety are emphasized throughout.

### Schedule

Day	Morning Session	Afternoon Session
1	Introduction to Pipeline Systems	Design Fundamentals Workshop
2	Materials & Structural Basics	Fluid Flow & System Design
3	Route Design principles and Construction Methods	Operational, Safety & Environmental Considerations
4	Design Optimisation Engineer's Ethics & Responsibilities	Group Case Study
5	Review & Assessment	Certificate Presentation

### Instructor: Bernhard Lässer – Member of Supervisory Board ILF Group

Bernhard Lässer has >25 years professional experience related to the pipeline industry. He has held engineering and management positions associated with design, project management and construction of major projects across Europe, the Middle East and the Americas. He also has lectured pipeline engineering at Technical University of Leoben for over 15 years.





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# Pipeline Engineering Programme

## Module MC02: Pipeline Materials and Mechanical Design



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### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics or engineering recommended; none required

### Key Learning Outcomes

1. Evaluate pipeline materials for mechanical, environmental, and economic suitability.
2. Describe manufacturing methods and their influence on pipeline performance.
3. Determine design pressure, wall thickness, and Maximum Allowable Operating Pressure using industry standards.
4. Analyse key pipeline loads and stress conditions.
5. Explain corrosion mechanisms affecting pipeline integrity.
6. Select appropriate corrosion protection, inspection, and monitoring methods.

### Module Overview

This module provides a solid foundation for selecting, designing, and protecting pipeline systems, with focus on materials, manufacturing methods, structural design, and corrosion prevention. Participants explore key material properties and manufacturing processes, and the course covers essential structural design concepts such as design pressure, wall thickness, and Maximum Allowable Operating Pressure in line with international standards. It also introduces corrosion mechanisms and the corresponding protection, inspection, and monitoring practices, equipping participants with the knowledge and skills needed to support safe and reliable pipeline systems in diverse environments.

### Course Outline

1. **Pipeline Materials:** Steel, plastic, concrete, and composite materials with key selection criteria for strength, durability, corrosion resistance, and cost.
2. **Pipe Manufacturing:** Main steel manufacturing methods, plastic and concrete production techniques, and essential quality control steps.
3. **Structural Design:** Design pressure, Maximum Allowable Operating Pressure, wall thickness calculation, and basic load and stress analysis.
4. **Corrosion Protection:** Corrosion mechanisms, coatings, cathodic protection, inhibitors, and key inspection and monitoring methods.

### Instructors



Gregor Mori  
TU LEOBEN



Thomas Antretter  
TU LEOBEN



Michael Stoschka  
TU LEOBEN



Florian Grün  
TU LEOBEN



Gerald Pinter  
TU LEOBEN



Thomas Willidal  
VA Böhler Welding



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# Pipeline Engineering Programme

## Module MC03: Pipeline System Design



### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics or engineering recommended; none required

### Key Learning Outcomes

1. Describe key fluid mechanics and thermodynamics principles relevant to pipeline systems.
2. Perform steady-state hydraulic calculations for liquid and gas pipelines.
3. Analyse pressure profiles and flow distributions in pipeline networks.
4. Apply basic methods for pipeline system optimisation.
5. Evaluate pipeline designs considering technical, economic, safety, and environmental factors.
6. Integrate engineering and stakeholder considerations into pipeline design decisions.

### Module Overview

This module provides a solid foundation in pipeline system design by integrating hydraulic principles with optimization strategies. It covers fluid mechanics fundamentals, including fluid properties, pressure loss calculations, and key thermodynamic aspects. Steady-state hydraulic analysis for liquid and gas systems is introduced with focus on flow behavior and pressure profiles. The module also outlines methods for optimizing pipeline systems by considering CAPEX, OPEX, dynamic flow behavior, safety, sustainability, and public acceptance. Combined, these topics ensure a clear understanding of the key parameters that shape efficient and reliable pipeline system design.

### Course Outline

1. **Fundamentals:** Introduction & overview, fluid properties, pipeline fluid mechanics, pipeline thermodynamics.
2. **Conceptual System Design:** Basis of system design, pressure profile development, pump/compressor station evaluation.
3. **System Optimization:** Introduction to system design optimization, cost element estimating, optimization approaches, and dynamic simulation studies.
4. **Complementary Requirements:** Operational safety and risk assessment, environmental sustainability, and emissions impact, as well as stakeholder acceptance.

### Instructors



Rolf Zeppenfeld  
Private Consultant



Siroos  
Azizmohammadi, TUL



Andrea Richmond  
ILF Group



Klaus Kaufmann  
Private Consultant



Tim Callan  
PSC



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# Pipeline Engineering Programme

## Module MC04: Pipeline Routing and Civil Design



### Key Facts

- ✓ **Duration:** 1 week (5 teaching days)
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics or engineering recommended; none required

### Key Learning Outcomes

1. Design Pipeline Routes using international recognised routing and alignment principles
2. Evaluate safety, environmental, socio-economic constraints in route selection
3. Use GIS tools for routing, interdisciplinary coordination and drawing output
4. Design of crossings and application of construction methodologies
5. Assessment of soil and rock behaviour, geohazards and mitigation measures
6. Civil design for pipeline infrastructure, regulatory compliance and stakeholder management

### Module Overview

This module provides an overview of pipeline routing and civil infrastructure design for onshore and offshore systems. It covers alignment planning, GIS-based route selection, and essential geotechnical principles to support safe and compliant routing. Practical challenges such as terrain, environmental constraints, and infrastructure interaction are addressed. Participants also learn key civil and geotechnical concepts, including soil and rock behaviour, foundation systems, and the design of stations, crossings, and marine facilities. The module highlights how routing, civil, and geotechnical factors shape pipeline design, construction, and long-term performance.

### Schedule

Day	Morning Session	Afternoon Session
1	Introduction to Pipeline Routing and Alignment	Route Selection Criteria - Safety, Environment, Socioeconomic
2	GIS Application and Route Optimisation	Crossing Design and Construction Methods
3	Soil and Rock Mechanics Geotechnical Investigation	Geohazards - Risk Assessment and Mitigation Measures
4	Civil Design for Pipeline and Related Infrastructure	Foundations and Facility Design
5	Regulatory Compliance, Stakeholder Management	Review, Assessment and Certificate Presentation

### Instructor: Werner Kainz – Consultant for ILF Group

Werner Kainz is a pipeline engineering specialist with extensive experience in the design and execution of major international oil and gas projects. He has served as engineering manager and project manager on landmark pipelines including TAG, BTC, ADCOP, IP, TANAP and TAP, covering routing, FEED, detailed engineering and PMC oversight across Europe, the Middle East and Asia. His work spans pipeline systems, pump and compressor stations, terminals and loading facilities, ensuring technically robust and operable infrastructure throughout all project phases.





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# Pipeline Engineering Programme

## Module MC05: General Aspects of Station and Terminal Design and Equipment



### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics or engineering recommended; none required

### Key Learning Outcomes

1. Describe the functions of stations and terminals in pipeline systems.
2. Interpret layout principles considering process flow, safety and site conditions.
3. Select appropriate rotating equipment for operational requirements.
4. Evaluate auxiliary equipment including valves, filters and instrumentation.
5. Apply industry standards and regulatory requirements in design.
6. Understand the integration of key engineering disciplines.
7. Analyse system factors affecting efficiency, safety and maintainability.

### Instructors

**Tim Callan**  
Managing Director  
PipeSystemConsult GmbH

With 40 years of global engineering and project experience, Tim Callan has supported major industrial, energy and pipeline projects worldwide. Since 2008, he has delivered specialised HAZID, HAZOP, SIL, LOPA and QRA services for more than 200 projects and 70 clients.



### Module Overview

This module introduces the principles of station and terminal design in pipeline systems, with a focus on equipment selection and system integration. It covers the roles of pumping, compressor and metering stations, along with layout planning, process flow, safety requirements and regulatory standards. Participants learn key selection criteria for pumps, compressors, drivers and other essential equipment such as valves, filters and instrumentation. Through practical examples, the module builds understanding of the technical and operational aspects of station and terminal design within pipeline infrastructure.

### Course Outline

1. **Stations and Terminals:** Roles of pumping, compressor, metering and storage facilities in pipeline systems.
2. **Layout Planning:** Process flow design, plot plans, safety zones and site integration.
3. **Rotating Equipment:** Selection of pumps, compressors and drivers based on performance and reliability.
4. **Auxiliary Equipment:** Valves, pressure control devices, filters and basic instrumentation.
5. **Safety and Compliance:** Key standards, safety systems, regulatory requirements and commissioning needs.
6. **Integration:** Coordination of disciplines, constructability, operability and practical design considerations.

**Günther Hörlesberger**  
ILF Group

Mr. Günther Hörlesberger has extensive experience in design, project engineering, project management, and leadership in Austria and internationally, and has been a lecturer in Austrian mechanical engineering education since 1978. He specializes in the design, testing, commissioning, and maintenance of machinery, energy systems, and pipeline systems.



# Pipeline Engineering Programme

## Module MC06: Pipeline Instrumentation and Automation



### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics, basics of pipeline engineering, or design fundamentals recommended; none required

### Key Learning Outcomes

1. Understand the fundamentals of automation, control, and measurement technology.
2. Gain an overview of key equipment, including PLCs, sensors, and actuators.
3. Be able to specify SCADA and telecommunications architectures for pipeline operations.
4. Gain insight into key SCADA applications for pipelines and their interfaces.
5. Develop SCADA configurations, including associated system configurations for pipeline operations.
6. Understand lifecycle management for the maintenance and upgrading of SCADA and automation systems.
7. Ensure safety integrity and cybersecurity in control systems.

### Instructors

**Andreas Linke**  
Senior Advisor  
Energy  
Infrastructure



**Thomas Thurner**  
TU LEOBEN



**Frank Beyer**  
ILF Group



### Module Overview

The first part of the module introduces the fundamentals of instrumentation, automation, and control systems in pipeline engineering. It covers measurement principles, data acquisition, control logic, and automation architectures, including PLCs, DCS, and SCADA systems.

The second part provides insights into the design of SCADA, automation, and control systems for pipelines. In addition, practice-oriented information will be provided on the implementation, operation, and upgrading of SCADA and automation systems and instrumentation.

Upon completion, participants will be able to plan and operate reliable, efficient, and secure instrumentation, automation, and SCADA systems for pipeline operations.

### Course Outline

1. **Instrumentation, Data Acquisition, and Monitoring:** System architecture, data acquisition, signal analysis, monitoring concepts, safety instrumentation, and real-time monitoring.
2. **Automation and Control Systems:** Automation components, PLCs, DCS, data management, and visualization.
3. **System Design, Integration, Communication, and Cybersecurity:** SCADA design and system integration, communication protocols, HMI systems, and data handling.
4. **SCADA Applications in Pipeline Operations:** Applications such as leak detection systems and interfaces to ERP and other enterprise systems.
5. **System Implementation:** Project execution aspects including tendering, factory acceptance testing (FAT), commissioning, and start-up.
6. **Lifecycle Management and Future Development:** System maintenance, upgrades, modernization strategies, and future trends.



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# Pipeline Engineering Programme

## Module MC07: Energy Pipeline Systems



### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics, basics of pipeline engineering, or design fundamentals recommended; none required

### Key Learning Outcomes

1. Describe core design, operation and safety aspects of oil and gas pipelines and storage.
2. Understand key challenges in hydrogen transport and storage.
3. Analyse offshore pipeline routing, installation and integrity.
4. Compare major energy pipeline systems and regulations.
5. Assess impacts of new technologies and the energy transition.
6. Integrate concepts across oil, gas, hydrogen and offshore systems.
7. Interpret case studies for practical insights.

### Instructors

**Tim Callan**  
Managing Director  
PipeSystemConsult GmbH

With 40 years of global engineering and project experience, Tim Callan has supported major industrial, energy and pipeline projects worldwide. Since 2008, he has delivered specialised HAZID, HAZOP, SIL, LOPA and QRA services for more than 200 projects and 70 clients.

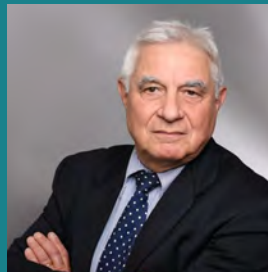


### Module Overview

This module provides an overview of energy pipeline systems for transporting and storing crude oil, natural gas and hydrogen. It covers the design, operation and safety aspects of oil and gas pipelines and storage facilities, and introduces the specific challenges of hydrogen transport, including materials and safety requirements. Offshore pipeline systems are also addressed, with emphasis on subsea routing, installation and environmental conditions. The module offers a broad understanding of the energy transport systems that underpin global infrastructure.

### Course Outline

1. **Crude Oil and Gas Pipelines:** Key transport systems, design basics, pumping and compression, pigging, leak detection, storage facilities and essential HSE practices.
2. **Hydrogen Pipelines and Storage:** Hydrogen properties, material challenges, storage options, regulatory requirements and gas pipeline repurposing.
3. **System Definition and Design Criteria:** subsea design, routing and surveys, installation methods, structural integrity, inspection and regulatory considerations.
4. **System Comparison and Integration:** Economic roles, strategic value and case study insights.



**Dario Erolani**  
Project Director in Industrial  
Plant Department, ILF Group

Dario Erolani is a mechanical engineer with over 40 years of pipeline experience. He has worked on major onshore and offshore projects in Europe, Asia, the Middle East and Africa. As a certified Project Management Professional (PMP), he combines technical pipeline expertise with strong project management skills.



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# Pipeline Engineering Programme

## Module MC08: Pipeline Systems for Water Transmission and Similar Fluids



### Key Facts

- ✓ **Duration:** 1 week (5 teaching days)
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics, basics of pipeline engineering, or design fundamentals recommended; none required

### Key Learning Outcomes

1. Design and evaluate water, wastewater and slurry pipeline systems using hydraulic analysis.
2. Select appropriate materials and equipment based on fluid properties and operating demands.
3. Integrate storage, pumping and control systems into complete pipeline networks.
4. Manage operational issues such as abrasion, sedimentation, corrosion and odour.
5. Apply safety, environmental and regulatory standards to non-hydrocarbon pipeline systems.

### Module Overview

This module introduces the design, operation and management of water, wastewater and slurry pipeline systems. It highlights the technical, hydraulic and material requirements for clean water supply, wastewater conveyance and solid-liquid mixtures. Participants gain practical insight into pressure control, flow behaviour, material selection, and safety, with attention to sedimentation, abrasion and environmental compliance. The module equips learners to address the unique challenges of non-hydrocarbon fluid transport.

### Schedule

Day	Morning Session	Afternoon Session
1	Introduction to Water, Wastewater and Slurry Systems	System Components and Fluid-Type Differences
2	Water Transmission Hydraulics and Sizing	Pump Stations, Flow Control and System Integration
3	Water System Materials and Corrosion Protection	Storage Types and Network Integration
4	Wastewater Conveyance Principles	Odor Control, Maintenance and Rehabilitation
5	Slurry Pipeline Basics and Flow Behaviour	Review, Assessment and Certificate Presentation

### Instructor: Alexander Heinz – Managing Director at CONCEPTORISE GmbH

Alexander Heinz is a senior expert in hydraulics and process engineering with more than 25 years of experience in the hydraulic and process design and optimisation of large scale water transmission and pipeline systems. He worked at ILF Consulting Engineers Austria from 1998 to 2021, including four years as Head of the Water Transmission Department. In 2021, he founded CONCEPTORISE GmbH in Innsbruck, where he serves as Managing Director and leads hydraulic design and optimisation for complex infrastructure projects worldwide.





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# Pipeline Engineering Programme

## Module MC09: Special Pipeline Systems



### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics, basics of pipeline engineering, or design fundamentals recommended; none required

### Key Learning Outcomes

1. Analyse and design upstream gathering systems for multiphase flow and terrain-related challenges.
2. Evaluate CO<sub>2</sub> pipeline design practices for corrosion control, containment, and compliance with CCS-related transport and storage requirements.
3. Apply safety and design standards for ammonia pipelines, including leak and pressure control.
4. Design hot-fluid transport systems with appropriate insulation and high-temperature materials.
5. Address technical and safety challenges to ensure reliable operation of specialized pipelines.

### Module Overview

This module offers an overview of specialized pipeline systems for challenging or high-risk fluids. It covers upstream flow lines and gathering systems with a focus on multiphase flow, terrain effects and flow assurance. CO<sub>2</sub> pipelines are examined in terms of safety, material compatibility and CCS regulatory requirements. Ammonia pipelines are addressed with emphasis on toxicity, pressure containment and leak prevention. The module also reviews hot-fluid transport, including thermal management, insulation and material selection. Together, these topics provide a solid understanding of the engineering challenges and design solutions for complex pipeline environments.

### Course Outline

1. **Upstream Flow Lines and Gathering Systems:** Multiphase flow behaviour, terrain effects, flow assurance, layout in complex topography and key operational practices.
2. **CO<sub>2</sub> Pipeline Systems (CCS):** Evaluate CO<sub>2</sub> pipeline design practices for corrosion control, containment, and compliance with CCS-related transport and storage requirements.
3. **Ammonia Transport Pipelines:** Ammonia properties, pressure containment, leak prevention, material selection and relevant regulatory requirements.
4. **Hot Fluid Transport Pipelines:** High-temperature applications, thermal expansion, insulation, material selection, flexibility and system monitoring.

### Instructors

**Holger  
Ott**  
TU LEOBEN



**Rolf  
Zeppenfeld**  
Private  
Consultant, ILF



**Markus  
Ellersdorfer**  
TU Leoben



# Pipeline Engineering Programme

## Module MC10: Pipeline Construction



### Key Facts

- ✓ **Duration:** 1 week (5 teaching days)
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics or engineering recommended; none required

### Key Learning Outcomes

1. Understand the full lifecycle of onshore and offshore pipeline construction.
2. Select suitable construction methods based on terrain, environment and project needs.
3. Manage HSE compliance and risk during construction.
4. Coordinate activities across stakeholders and regulatory bodies.
5. Address construction challenges in difficult onshore and subsea conditions.
6. Ensure pipeline integrity through proper testing and documentation.

### Module Overview

This module provides an overview of pipeline construction in both onshore and offshore environments. It covers the full construction lifecycle, including new installations, station and tank farm development, rehabilitation and conversion. Key topics include construction methods, equipment, logistics, safety, environmental considerations and project execution. Offshore elements such as subsea installation and marine operations are also introduced. The module equips participants with the practical skills needed to plan and manage safe, efficient and compliant pipeline construction projects.

### Schedule

Day	Morning Session	Afternoon Session
1	Pre-Construction Planning and Right-of-Way	Construction Planning, Permitting and Stakeholder Coordination
2	Site Preparation, Trenching and Pipe Handling	Welding, Lowering-In, Backfilling and Crossings
3	Testing, Commissioning and Inspection	Safety, Environmental Management and Special Construction Conditions and QA/QC
4	Offshore Planning and Marine Surveys	Offshore Installation Methods: S-lay, J-lay and Reel-lay
5	Subsea Crossings and Protection	Offshore Testing, HSE, Risk Management and Coordination

### Instructors



**Diana Rennkamp**  
Herrenknecht AG



**Gunnar Brandin**  
OGE



**Patrick Berré**  
DENYS



**Thorsten Gundlach**  
DNV Energy Systems



**Christof Wöste**  
PSI Pipeline Services



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# Pipeline Engineering Programme

## Module MC11: Pipeline Operation, Integrity Management, and Maintenance



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### Key Facts

- ✓ **Duration:** 2 weeks
- ✓ **Format:** In-person & online (Leoben, Austria)
- ✓ **Language:** English
- ✓ **Certificate:** Micro-Credential (ECTS transferable)
- ✓ **Prerequisites:** Technical background in fluid mechanics, basics of pipeline engineering, or design fundamentals recommended; none required

### Key Learning Outcomes

1. Operate pipeline systems using best practices and modern monitoring tools.
2. Apply integrity management techniques to assess and maintain pipeline condition.
3. Use preventive, predictive and condition-based maintenance strategies.
4. Select and apply effective methods for pipeline repair and rehabilitation.
5. Ensure safety and environmental compliance during operations and maintenance.
6. Develop and manage emergency response plans for incidents.

### Module Overview

This module provides a detailed overview of pipeline operation, integrity management, maintenance and repair. It covers efficient operation, advanced monitoring and control, and integrity methods such as in-line inspection and non-destructive testing. Practical maintenance and field repair techniques are also addressed, equipping participants with the skills needed to manage safe and reliable pipeline systems in diverse environments.

### Course Outline

1. **Pipeline Operation:** Operating procedures, SCADA monitoring, flow and pressure control, performance optimisation and safety compliance.
2. **Integrity Management:** Principles of integrity assessment, in-line inspection and NDT methods, corrosion control, risk mitigation and regulatory requirements.
3. **Pipeline Maintenance and Repair:** Preventive and risk-based maintenance, pigging, emergency response and repair techniques such as clamps, sleeves/wraps, welding and pipe exchange.

### Instructors

#### Dirk Strack Consultant

#### Strack International Consulting (SIC)

Dirk Strack has more than 35 years of experience in the international oil and gas industry. After senior technical and management roles at the Transalpine Pipeline, he has been working as an independent consultant since 2019, advising on technical, operational, safety and compliance topics and lecturing at international conferences.



#### Michael Beller

#### Member of ROSEN's Corporate Strategy Office

Michael Beller has over 37 years of experience in the pipeline industry and is part of the Corporate Strategy Office at the ROSEN Group. His background spans pipeline inspection and integrity, with long-standing involvement across technical and commercial roles. He has also delivered training courses for the pipeline industry for more than 20 years.





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# Pipeline Engineering Programme

## Module MC12: Project Management



### Key Facts

- ✔ **Duration:** 1 week (5 teaching days)
- ✔ **Format:** In-person & online (Leoben, Austria)
- ✔ **Language:** English
- ✔ **Certificate:** Micro-Credential (ECTS transferable)
- ✔ **Prerequisites:** Technical background, basics of pipeline engineering recommended; none required

### Key Learning Outcomes

1. Understand the stage-gate process for project implementation
2. Gain insight into essential project management principles, including the stage-gate approach, PMI knowledge areas, roles and responsibilities, organizational structures, and project delivery models
3. Build a tailored toolkit for efficient and effective project management
4. Develop, monitor and control project schedules, deliverables, budgets and resource allocations
5. Acquire basic knowledge of service, supply, and construction contracts
6. Conduct risk assessments and apply appropriate risk-mitigation strategies
7. Identify stakeholders and manage stakeholder engagement

### Module Overview

This module offers a comprehensive overview of pipeline project implementation, covering all stages from the initial concept to the start of operations. After an introduction to the fundamental principles of pipeline project management, students will take on specific roles - such as project owner, engineer, PMC, EPC contractor, or supplier - and collaboratively manage a fictitious pipeline project. Through this hands-on approach, the students will learn to establish a shared understanding of project objectives, jointly mitigate execution risks throughout all project phases, and work together efficiently and effectively through to project completion.

### Schedule

Day	Morning Session	Afternoon Session
1	Introduction to Pipeline Project Management	Fundamentals of Pipeline Project Management
2	Introduction of Fictive Pipeline Project	Organizing the Project
3	Appraise and Select Phase	Appraise and Select Phase
4	Define Phase	Execution Phase
5	Phase out and start of operation	Feedback session and Certificate Presentation

### Instructor: Dr. Andreas Linke - Senior Advisor Energy Infrastructure

Andreas has over 30 years of experience in the energy sector, specialising in pipeline project management and the transport and distribution of petroleum products. He has led major international projects, including the Trans-Asia Gas Pipeline, and has strong expertise in CAPEX/OPEX modelling, project finance, and advising governments and institutions on grid expansion and green molecule transport. His background also includes scientific work, teaching, R&D leadership, board roles, and over a decade as managing director of a consulting firm. More information at [www.andreaslinke.net](http://www.andreaslinke.net)

