



Training with Penspen

COURSE GUIDE



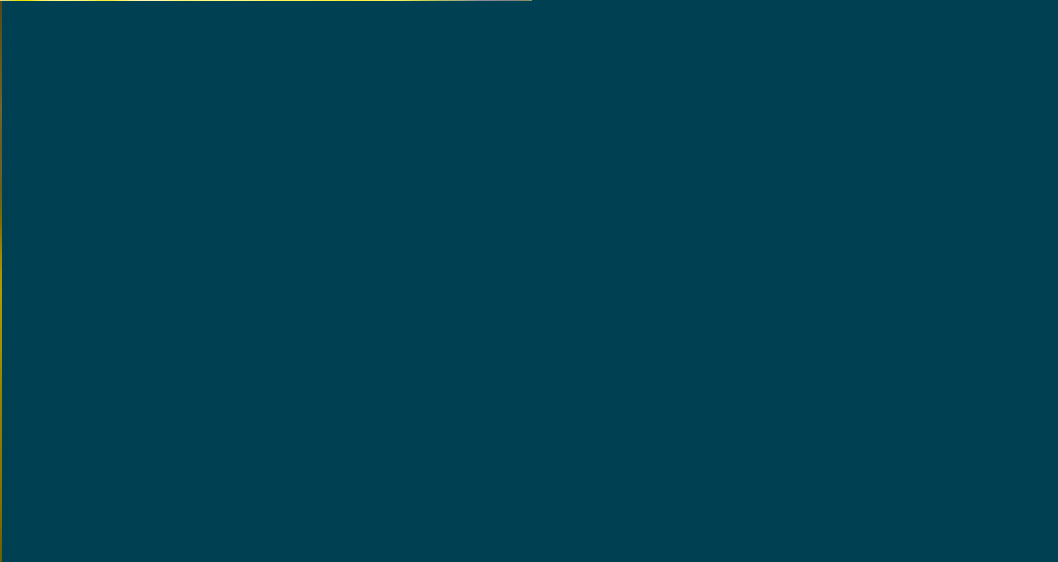
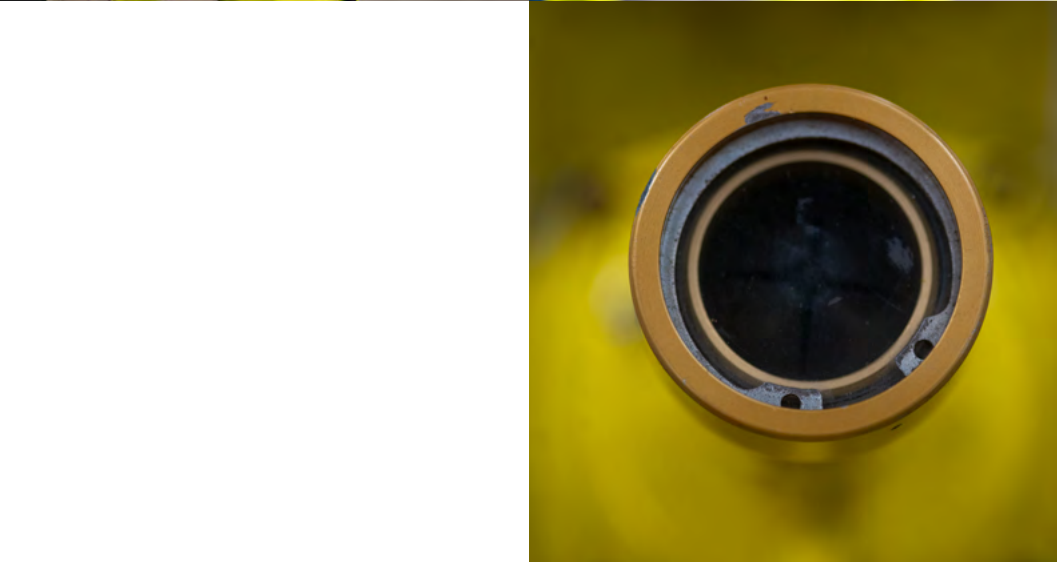


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Penspen



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Who We Are

Since our inception over 70 years ago, our vision has remained the same – improve access to secure and sustainable energy.

Penspen is a leading global energy consultancy company. Our teams design, maintain and optimise energy infrastructure to improve access to secure and sustainable energy for communities worldwide, and we’ve delivered more than 15,000 projects across over 100 countries.

Our people bring their specialist knowledge to projects globally, providing a wide range of services including engineering, project management, asset management, asset integrity, digital solutions, and knowledge & training.

Our training courses are designed to make the most of the extensive expertise and experience that our people have to offer – and that’s what sets us apart.

OUR VALUES

At Penspen, we pride ourselves on our values and these are at the core of everything we do.



Working Safely and Responsibly

Safety is our number one priority and we are committed to the goal of zero harm. We work as a team to take care of each other and ensure everyone goes home safely. We pursue success safely and responsibly, ensuring that we operate both sustainably and ethically.



Commercial Success

We encourage profitable entrepreneurship and actively manage risk to drive sustainable and commercially successful growth of our business.



Our People

Our people are our key assets. As a team of insightful people, we are dedicated to delivering value to our clients. We treat people as individuals by rewarding their successes, supporting their aspirations and empowering them to make a difference.



Our Commitments

We deliver on our commitments to both our clients and each other. By working together as “One Penspen”, we ensure high-quality work, on time and within budget, every time.



Technical Excellence

We value and cultivate our technical leadership in order to help our clients. We support each other by sharing knowledge across the business and the industry. Enabling critical knowledge to flow allows us to address our clients’ complex challenges.



Why Penspen

Penspen are a trusted training provider for major companies and household names in the energy and engineering sectors globally, including EDF, Centrica, E.ON, General Electric, Advantica, Scottish Power and National Grid.

We design and deliver highly effective training solutions for learners, balancing theory and hands-on practical experience, and we're proud that our courses are recognised by the leading industry organisations for continuing professional development.

Our course trainers are senior and experienced members of Team Penspen. With extensive university lecturing experience and years of experience in the pipeline industry, they are experts in their respective fields and offer excellent insight, guidance and leadership on industry best practice.

Our courses can be presented in English or with simultaneous translation, and we offer courses both in-person at one of our sites or online.

Bespoke training

Penspen's training team work with you to develop a highly effective course that suits your needs. Our subject matter experts from Penspen's Centre of Engineering Excellence can produce custom course materials and modules to ensure your team get the most out of the course.

To find out how we can create a course that covers exactly what your people need, get in touch with our dedicated training team.



Asset Management Courses

As international specialists in the provision of engineering support, Penspen are uniquely placed to offer comprehensive and intensive training courses relating to asset management.

Our extensive experience in operations, maintenance and facilities management in the oil, gas, power and utility industries contribute to our recognised track record for successfully delivering a comprehensive range of services and solutions to developers, owners and users of energy infrastructure globally – without ever compromising on safety.

Our series of asset management training courses combine this deep-rooted engineering heritage with a state-of-the-art training facility in Neath, Wales. Training courses are led by senior industry experts with extensive expertise in intermediate pressure (IP) and high pressure (HP) gas network assets, pipelines, industrial facilities and power stations.

Courses relating to asset management

High Pressure Gas Transmission Systems: Five-Day Intensive Course

High Pressure Gas Transmission Systems: Two-Day Isolation, Venting and Purging Course

Five-Day Pressure Control Appreciation Course


Level 3 NVQ Diploma in Engineering Maintenance


Introduction to Cathodic Protection




Our asset management courses are officially recognised by IGEM, the Institution of Gas Engineers & Managers. This recognition is a mark of quality and safety, confirming that our training IGEM's rigorous requirements.

High Pressure Gas Transmission Systems: Five-Day Intensive Course

 **Location**
Neath, Wales, UK

 **Course length**
5 days

 **Price**
£1,950 plus VAT per delegate

What delegates will learn

This course blends classroom and practical tuition to build a strong foundational knowledge of the standards, regulations and safety issues relating to the UK gas industry. Participants will develop a comprehensive understanding of the UK gas industry, relevant standards and regulations, safe working practices, and various maintenance philosophies. Through hands-on experience, participants will become proficient in the safe isolation, maintenance and operation of gas transmission systems.

Why this course?

State-of-the-art facilities

Our purpose-built training headquarters in Neath, South Wales is one of the best-equipped facilities in the UK for training on high pressure gas. We provide a safe, controlled environment for participants to gain practical experience, avoiding operational disruption.


Hands-on experience


There's no match for practical experience, so this course is designed to help participants to gain confidence through putting their skills into practice.

Course modules

- Industry overview, legislation, codes and standards
- Safe working practices
- Gas laws
- Overview of underground pipe systems: design, integrity and causes of failure
- Selection and build of entire fuel gas systems, build and isolation of gas transmission equipment
- Pressure regulating and control valves isolation using plug valves
- Venting ball valves
- Shutdowns, pipeline testing and corrosion protection
- Gas regulating equipment
- Filtration, dilution purge and trapped gas, flow regulating valves, gas metering, gas instrumentation and control systems
- Maintenance regimes and philosophies
- Pipelines and on-line inspection
- Planning, procedures and documentation systems
- Specifying maintenance schedules
- Skid units
- Diagnostic checks

High Pressure Gas Transmission Systems: Two-Day Isolation, Venting and Purging Course

 **Location**
Neath, Wales, UK

 **Course length**
2 days

 **Price**
£1,150 plus VAT per delegate

What delegates will learn

Designed for managers, engineers, technicians and operators working in power generation, industry and gas supply, this course covers safety, system design, isolation, venting and purging. Participants will learn in-depth about UK gas industry legislation and best practice, and will gain hands-on experience in the isolation, maintenance and operation of gas transmission systems.

Why this course?

State-of-the-art facilities

Our purpose-built training headquarters in Neath, South Wales is one of the best-equipped facilities in the UK for training on high pressure gas. We provide a safe, controlled environment for participants to gain practical experience, avoiding operational disruption.

Hands-on experience

There's no match for practical experience, so this course is designed to help participants to gain confidence through putting their skills into practice.

Course modules

- UK gas industry legislation, best practice, codes and standards
- Hazardous areas: zoning and equipment
- Site entry procedures
- Emergency and evacuation procedures
- Gas sampling
- Safe plant isolation
- Isolation using plug valves
- Venting and purging
- Venting ball valves
- Trapped gas
- Displacement purge of heat exchanger
- Dilution purge of heat exchanger
- Skid units
- Purge regulator installation
- Purging and commissioning complex pipe systems

Five-Day Pressure Control Appreciation Course

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Location
Neath, Wales, UK
- 📅

Course length
5 days
- 💷

Price
£1,950 plus VAT per delegate

What delegates will learn
This five-day course is designed to provide a general understanding of how gas pressure is controlled to ensure it is delivered to consumers at the correct pressure. Aimed at managers, engineers and technicians, the course focuses on the standards and regulations governing pressure control activities, as well as the operating principles of various regulators and control configurations utilised across all pressure ranges. This course combines both classroom-based teaching and practical tuition.

Why this course?

Safety and compliance
Upon completion of this course, participants will have a sound understanding of legislation and industry standards relevant to pressure control activities and equipment, such as IGEM/TD/13 Edition 2, PSSR and DSEAR.

State-of-the-art facilities
Our purpose-built training headquarters in Neath, South Wales is one of the best-equipped facilities in the UK for training on high pressure gas. We provide a safe, controlled environment for participants to gain practical experience, avoiding operational disruption.

Comprehensive
This course covers the operating principles of pressure control equipment across all pressure ranges in use, including regulations, valves, filters, heat exchangers, metering systems and safety devices such as relief valves and slam shuts.

Course modules
Industry legislation, standards, best practice and safety
Introduction pressure control equipment
Commission pressure regulating systems - direct acting
Pilot operated control systems
Commission pressure regulating systems – auxiliary control system + needle valve

Level 3 NVQ Diploma in Engineering Maintenance

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Location
Neath, Wales, UK
- 📅

Course length
12 weeks within an 18-24 month period
- 💷

Price
Upon request via our formal proposal process

What delegates will learn
This course is designed to provide learners with an understanding of the most common equipment and typical arrangements that are encountered in the field. Participants will gain a full understanding of the operating standards and legislation that impact the owners and operators of gas pipelines and assets, as well as a knowledge of safe working practices in hazardous areas. Upon completion of the course, participants will be qualified to oversee and perform functional maintenance and overhauls of pressure reducing equipment with a pressure of up to 7 bar.

Why this course?

Learning and assessment
Participants will shadow experienced operators, gaining exposure to the plant and maintenance activities. On-the-job assessment opportunities will also be provided throughout the training to consolidate learning.

State-of-the-art facilities
Our purpose-built training headquarters in Neath, South Wales is one of the best-equipped facilities in the UK for training on high pressure gas. We provide a safe, controlled environment for participants to gain practical experience, avoiding operational disruption.

Course modules
Week 1: Gas supply system and general safety
Week 2: Governor foundation part 1
Week 3: Governor foundation part 2
Week 4: Governor foundation part 3
Week 5: Below 7 bar control systems
Week 6: Pressure management and profiling
Week 7: Buried modules
Week 8: Above 7 bar PRIs - introduction
Week 9: Above 7 bar PRIs – HP regulators
Week 10: Above 7 bar PRIs – slam shuts, actuators, and plant isolation, vent and purge
Week 11: Above 7 bar PRIs – pre-heating systems
Week 12: Above 7 bar PRIs – regulator functional check procedures

With a first time pass rate of around 90%, our students receive a blend of theoretical and practical training, as well as in-the-moment assessment. This style of education means that our students have first hand experience of the equipment they will work on in real life whilst at the same time receiving the underpinning theory. Penspen is one of the only training providers in the UK able to deliver NVQs in this way and therefore assure higher first time pass rates for our students.

Introduction to Cathodic Protection

- Location**
Worldwide
- Course length**
1 day
- Price**
£7,500 for up to 14 employees

What delegates will learn
This bespoke awareness course, hosted at your own site or one of Penspen's sites across the UK, is designed to be delivered internally to your team according to your requirements. It explores the key principles around cathodic protection, laying important groundwork around both sacrificial anode and impressed current systems. Delegates will study essential principles regarding safe operation and maintenance, and the effects of cathodic protection on other systems.

Why this course?

Tailored to your requirements
With a wide range of modules to choose from, our training team will work with you to design a highly effective learning solution that suits your team. The course outline and modules have been designed by senior consultants from Penspen's Centre of Engineering Excellence who are experts in the subject of cathodic protection.

Full project lifecycle
We offer modules across the entire lifecycle of a cathodic protection system, providing a comprehensive foundation covering all key principles around operation, monitoring, maintenance, inspection, analysis, and safety. It can also cover retrofitting, so that cathodic protection systems can be upgraded or replaced as necessary.

Sample course modules
Key principles and fundamentals
Potentials and polarisation
Sacrificial anode cathodic protection: onshore systems
Sacrificial anode cathodic protection: offshore systems
Sacrificial anode materials and equipment
Impressed current cathodic protection
Impressed current equipment
Special considerations: shielding coatings, effects on earthing systems and valve pits
Safe working procedures
Operations, maintenance and monitoring
Pipe to soil and seawater potentials
Measurement errors
Stray current: AC and DC interference
Transformer rectifier and groundbeds
Routine and non-routine monitoring
Offshore pipeline monitoring
Special surveys
Data and trend analysis
Excavation and inspection
Retrofitting
Additional cathodic protection stations: installing linear anodes and repairing damaged coating





Asset Integrity Courses

As many of the assets in the oil and gas industry today are nearing the end of their originally intended design life, asset life extension has become an increasingly attractive option to avoid decommissioning assets. 70% of the world's production consists of mature assets – so engineers qualified in asset life extension are becoming increasingly in demand.

Penspen's asset integrity training courses are tried and tested: we are trusted by major companies worldwide to provide effective, efficient and comprehensive training qualifications which are highly respected industry wide.

Our courses cover both the assessment and management of pipeline asset integrity, and Penspen course trainers are selected based on their wealth of specialist expertise within the full asset integrity and management life cycle.


At Penspen, our 'Zero Harm' pledge informs everything we do, so our asset integrity courses cover all relevant legislation, regulatory guidance and industry standards – we never compromise on safety and compliance, and that's a vision we endeavour to pass on to all course attendees.


Courses relating to asset integrity


Pipeline Defect Assessment Course (PDAC)

Pipeline Integrity Management Course

Pipeline Defect Assessment Course (PDAC)

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Location
In-person at 150 Holborn, London or online.
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Dates
1-3 April 2025 or 23-25 September 2025
- 

Price
£1500 plus VAT per delegate

What delegates will learn
This comprehensive course covers the essential principles of pipeline defect assessment, balancing both theory and hands-on practical training to ensure all participants are confident, capable and qualified to carry out pipeline defect assessments upon completion of the course.

Why this course?

Technical excellence
Participants will gain insight from leading asset integrity consultants at Penspen into fracture mechanics and fatigue, and the fundamental analytical methods used to assess pipeline defects. As experts in the field, our course leaders are well-versed in industry best practice.

A comprehensive foundation
Taking a holistic approach, this course covers all of the key elements of pipeline defect assessment – from pipeline basics to integrity management.

Looking to the future
This course introduces hydrogen in the context of pipeline defects, so participants will have a strong knowledge base to build on as the energy transition accelerates.

Course modules
Pipeline basics: why do pipelines fail?
Defect assessment fundamentals
How to assess corrosion defects
How to assess gouges
How to assess dents
How to assess cracks
How to assess weld defects
Risk management, risk analysis and integrity management
Introduction to pipeline repairs
Introduction to hydrogen

Pipeline Integrity Management Course (PIMS)

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Location
In-person at 150 Holborn, London or online.
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Dates
8-9 April 2025 or 16-17 September 2025
- 

Price
£1450 (early bird offer) plus VAT per delegate
£1800 (standard price) plus VAT per delegate

What delegates will learn
This course provides participants with a sound knowledge of the implementation and management of PIMS. From design right through to operations, this course covers all stages in the life of a pipeline and provides in-depth teaching about the identification and control of risks in order to achieve pipeline integrity. It also applies to all duties, whether it's hydrocarbon, hydrogen, CO2 or water.

Why this course?

This course is vital learning for pipeline managers, engineers and designers who are involved in risk assessment & management, pipeline design & construction, pipeline operations, inspection, maintenance, repair, and pipeline integrity management.

Regulatory safety and compliance
The course addresses the recent ISO standard on PIMS as well as current codes such as ASME B31.8S, API 1160, DNV RP 116 and BS PD 8010 Part 4, so you can have peace of mind that your pipeline integrity management strategy is completely compliant.

Extending asset life
By focusing on life extension, change of duty, and how long-term pipeline integrity is achieved, this course equips participants with the skills needed to design and implement highly operable long-term solutions for your assets.

Course modules
Overview and introduction to PIMS
PIMS policy
PIMS organisation
PIMS planning and implementation
Measuring PIMS performance
Reviewing PIMS performance
PIMS auditing



Pipeline Legislation Courses

In order to operate successfully, a pipeline has to operate safely. Whether onshore or offshore, pipelines are subject to rigorous regulation and legislation which must be considered and adhered to in all phases of their life cycle. Anyone involved in the construction, operation or decommissioning of a pipeline has a duty to act responsibly, and that means having a full understanding of the laws involved.

Our pipeline legislation courses address all relevant legislation, regulations, codes and standards, from planning to decommissioning. We cover government departments and non-government agencies involved, applicable procedures, duties that must be complied with, and authorisations that must be obtained.

These courses have been designed with safety and compliance front and centre, employing tried and tested learning methods to make sure participants get the most out of each session. Our track record speaks for itself – Penspen are industry-recognised training providers, having trained more than 4,000 people in public and private training courses across our global regions.

Courses relating to pipeline legislation

UK Offshore Pipeline Legislation Awareness

UK Onshore Pipeline Legislation Awareness

UK Offshore Pipeline Legislation Awareness

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Location
In-person at 150 Holborn, London or online.
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Dates
13 May 2025 or 14 October 2025
- £

Price
£995 (early bird offer) plus VAT per delegate
£1100 (standard price) plus VAT per delegate

What delegates will learn
This course is for anyone whose work relates to the planning, design, construction, commissioning and decommissioning of offshore oil and gas pipelines. It's a comprehensive deep dive into UK legislation regarding planning, major accident hazard, environmental protection and decommissioning legislation for offshore pipelines.

Why this course?

From beginning to end
We'll look at key UK legislation across the entire lifecycle of a pipeline, from obtaining building permissions all the way to safe decommissioning of the pipeline.

Zero harm
At Penspen, our QHSE vision of 'Zero Harm' clarifies our pledge to prevent harm to individuals and the environment in everything we do. This vision directs the syllabus of this course, because safety and compliance always come first.

Environmental protection
Participants will study the Marine and Coastal Access Act 2009/Marine Scotland Act 2010, the Control of Pollution Act 1974, and the Waste Management Licensing Regulations 1994 – so you can be sure that all pipeline works are carried out responsibly.

Course modules
Introduction to pipelines and overview of pipeline legislation
Getting permission to build the pipeline
Getting permission to pre-dredge, to place articles on the seabed, and to discharge substances into the sea
Designing and building the offshore pipeline safely
Operating the pipeline safely
Dealing with emergencies
Protecting the environment
Getting authorisation to decommission
Decommissioning a pipeline safely

UK Onshore Pipeline Legislation Awareness

- 📍

Location
In-person at 150 Holborn, London or online.
- 📅

Dates
14 May 2025 or 15 October 2025
- £

Price
£995 (early bird offer) plus VAT per delegate
£1100 (standard price) plus VAT per delegate

What delegates will learn
This course is designed to prepare participants to review and develop procedures to ensure compliance with the Pipeline Safety Regulations (PSR) for onshore pipelines. With a focus on key legislation, best practices and guidance from regulatory bodies, this course is aimed engineers, managers, QHSE personnel and regulators looking to develop their understanding of the UK's pipeline regulator regime.

Why this course?

Experienced course leaders
As senior and experienced members of Team Penspen, all of our course trainers are experts in the relevant legislation, and can offer excellent guidance on industry best practice.

Zero harm
At Penspen, our QHSE vision of 'Zero Harm' clarifies our pledge to prevent harm to individuals and the environment in everything we do. This vision directs the syllabus of this course, because safety and compliance always come first.

Peace of mind
This course is designed to give participants a clear understanding of all key legal requirements contained within the PSR, GS(M)R and RIDDOR that must be complied with.

Course modules
Introduction and overview of pipeline legislation
What constitutes a pipeline?
Understanding notifications required by regulatory bodies
Understanding timescale and reporting requirements
Applying RIDDOR to onshore and offshore pipelines



Energy Transition Courses

Europe has 260,000km of pipelines supplying 100 million households and industries. The urgency of the energy transition demands significant infrastructure repurposing, particularly of our pipeline networks, to reduce emissions, create jobs, and drive sustainable development.

Hydrogen will play a major role in the energy transition. It's a key energy carrier - it can help to decarbonise hard-to-electrify industries and it can be used for energy storage. Our course focuses on the repurposing of existing infrastructure, which brings massive economic advantages and avoids the decommissioning process for ageing assets.

Carbon Capture, Utilisation, and Storage (CCUS) also plays a significant role in creating a more flexible energy supply, by utilising conventional fuels but capturing the carbon pre- or post-combustion.

Penspen is a thought leader in energy transition - and we have a proven track record taking on groundbreaking projects in hydrogen and CCUS around the world.

Courses relating to energy transition

Repurposing Pipelines for Hydrogen

CO2 Capture and Transmission

Repurposing Pipelines for Hydrogen

- 📍

Location
150 Holborn, London or Aberdeen
- 📅

Dates
London: 9-10 September 2025

Aberdeen: 17-18 June 2025
- 💷

Price
£1,500 plus VAT per delegate

What delegates will learn
This course is for anyone working on conceiving, planning, designing, constructing, and commissioning assets repurposed for hydrogen. It's a comprehensive deep-dive into the challenges of repurposing assets, the emerging legislative framework, supporting research, timescales, and the required resources. It also identifies gaps in the current industry knowledge and ongoing investigation.

Why this course?

70+ years of experience in energy infrastructure
Penspen has completed innovative hydrogen repurposing projects for transmission and distribution infrastructure in Portugal, Ireland, Turkey, the UK, and Greece.

Be prepared for the next step
As the energy transition accelerates, the course will provide practical advice regarding the priorities and resources required for the next step in your hydrogen project.

Groundbreaking research
Penspen contributes to many of the major hydrogen industry bodies, and is regularly published in leading journals for thought leadership around hydrogen - so this course will provide the most up-to-date research around hydrogen repurposing.

Course modules
Sources and types of hydrogen
Hydrogen properties
Legislation, codes, standards, 100% hydrogen, and blends
Establishing energy capacity (steady state and transient)
Deleterious effects of hydrogen (embrittlement, fatigue)
Strategies for achieving an equivalent maximum allowable operating pressure
Materials testing
Avoiding emissions (NOx and fugitive emissions)
Assessing hazardous zones and ATEX requirements
The compressor of choice
Quantitative Risk Assessment (QRA) and land use planning
Protection requirements
New venting and purging requirements
Seals and connections
Instruments
Future inspection requirements and technology readiness level
Operator competencies
First responder training
Timing and cost expectations
Important research and sources of data

CO2 Capture and Transmission

- 📍

Location
150 Holborn, London or Aberdeen
- 📅

Dates
London: 23-24 September 2025

Aberdeen: 24-25 June 2025
- 💷

Price
£1,100 plus VAT per delegate

What delegates will learn
This course is for anyone whose work relates to conceiving, planning, designing, constructing, and commissioning assets repurposed for the capture and transportation of CO2. It's a complete and comprehensive course exploring the challenges involved, the emerging legislative framework, supporting research, timescales, and the required resources.

Why this course?

70+ years of experience in energy infrastructure
Penspen has led projects to capture and transport CO2 in the Middle East and the UK, allowing the development of practical solutions. This course is led by experts from our in-house Energy Transition Consultancy.

Be prepared for the next step
As the energy transition accelerates, the course will provide practical advice regarding the priorities and resources required for the next step in your CO2 capture project.

Groundbreaking research
Penspen contributes to many industry working groups and industrial bodies, so we offer insight into the most up-to-date information concerning CO2 capture and transport - as well as a proven track record on projects in this area.

Course modules
CO2 capture technology
Petrogenic and anthropogenic sources of CO2
Properties of CO2
Steady-state and transient conditions
CO2 phase equilibria and effect of contamination
Designing CO2 pipelines (fracture management)
Managing contamination from multiple sources
Legislation, codes and standards
Quantitative Risk Assessment (QRA)
Protection requirements
Venting and purging requirements
Seals and connections
Future inspection requirements
Operator competencies
First responder training
Timing and cost expectations
Important research and sources of data



Working at Penspen

Our training courses aim to ensure delegates reach an excellent standard of competency, and the skills developed on our courses are both highly valuable and employable.

At Penspen, we're always on the lookout for the brightest minds to help us engineer the future of energy - whether that's through our Graduate Programmes or our vacancies across our 12+ global offices.

Our global teams design, maintain, and optimise energy infrastructure to improve access to secure and sustainable energy for communities worldwide. Working at Penspen, you'll sharpen your skills working on some of the most technically challenging engineering projects in the global energy sector, including projects that are driving the energy transition.

So, if you're looking for an exciting and rewarding career in the energy sector, visit our website to find out more about life at Penspen and our current opportunities:

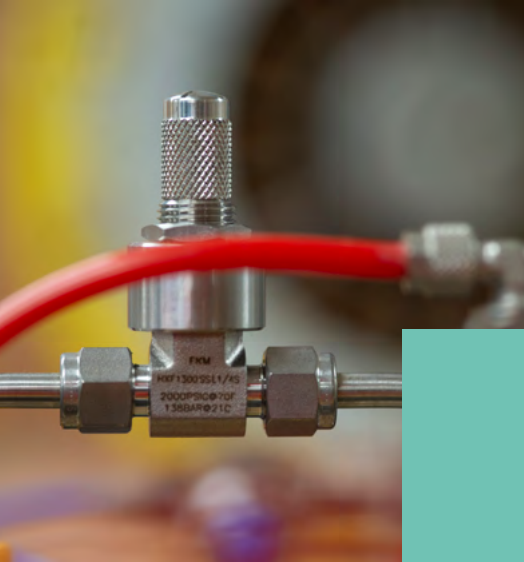
🔗 www.penspen.com/work

Get in touch with our
dedicated training team
for more information or to
book your place on any of
our courses:

✉ contact@penspen.com

📄 Fill out our online enquiry form





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