Delivery Methods

**Face-to-face training**

Suitable for client groups, where training can be focused on the organisation’s specific type of operations, risk assessment practices and personnel development needs. We offer our most popular topics as public courses and events which are suitable for individuals.

In line with industry thinking about how people learn, all of our classroom training is highly interactive, focusing more on activities than on presentation of slides.

**Live virtual training**

Our training courses can be delivered over a series of live online sessions using MS Teams, Skype or Zoom. Our most popular topics are offered as public courses, which are suitable for individuals. For client groups our standard courses can be tailored to meet the organisation’s requirements.

In our experience, live online training courses offer an effective alternative to face-to-face training, where travel is restricted or clients have delegates at several locations. Sessions are highly interactive with the focus on activities to communicate and embed course content.

**Distance learning**

Distance learning programmes offer the chance for individuals to study from any location in the world, at their own pace, as well as representing a cost-effective solution for large client groups. Individuals can choose between our postgraduate qualifications and TÜV Rheinland Risktec CPDs. All of our distance learning course materials include activities, slides with explanatory notes, videos and further reading as a minimum. Postgraduate courses also include discussions, group tasks and virtual classrooms.

Client programmes can be developed from a combination of our standard, customised or bespoke courses according to the organisation’s specific needs.

**Blended learning**

Blended learning is a combination of face-to-face, live virtual and distance learning, tailored to client’s specific requirements. It brings together the advantages of the classroom (interactivity, networking etc.) with the benefits of studying at the appropriate pace and time that is sensible for the participant and cost-effective for the organisation.

The blended learning programme design is based around the organisation’s training needs, specific processes and procedures, working patterns and preferences.
## Cross-sector

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Bowtie Risk Management 1,2</td>
<td>Hazard &amp; Operability (HAZOP) Leader</td>
<td>Layers of Protection Analysis (LOPA)</td>
</tr>
<tr>
<td>BowtieXP Software (Basic &amp; Advanced)</td>
<td>Hazard &amp; Operability (HAZOP) Study 1,2</td>
<td>Performance Monitoring, Auditing and Management Review</td>
</tr>
<tr>
<td>Business Continuity Management (BCM)</td>
<td>HSE Accident Cost Calculation</td>
<td>Principles of Risk Management 1,2</td>
</tr>
<tr>
<td>Culture, Behaviour &amp; Competency 1,2</td>
<td>HSE Management Systems 1,2</td>
<td>Project Risk Management</td>
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<tr>
<td>Emergency Response &amp; Crisis Management 1,2</td>
<td>HSE in Project Risk Management</td>
<td>Reliability, Availability &amp; Maintainability Analysis 2</td>
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<tr>
<td>Enterprise Risk Management (ERM)</td>
<td>HSSE Leadership for Managers</td>
<td>Risk Analysis 1,2</td>
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<tr>
<td>Environmental Risk Assessment</td>
<td>HSSE Leadership for Managers</td>
<td>Risk Reduction &amp; ALARP 1,2</td>
</tr>
<tr>
<td>Fault Tree and Event Tree Analysis 2</td>
<td>HSSE Risk Management for Managers</td>
<td>Root Cause Analysis</td>
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<tr>
<td>Functional Safety of Safety-Related Systems 2</td>
<td>Human Factors in Design &amp; Operations 1,2</td>
<td>Safety/HSE Cases 1,2</td>
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<tr>
<td>Hazard Identification 1,2</td>
<td>Human Failures &amp; Safety Critical Task Analysis</td>
<td>Workplace Safety 2</td>
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## Oil & Gas

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<thead>
<tr>
<th>Course</th>
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<tr>
<td>Asset Integrity Risk Management</td>
<td>Oil &amp; Gas and Process Industry Risk Studies 2</td>
<td>Process Hazard &amp; Risk Analysis 3</td>
</tr>
<tr>
<td>Engineered Risk Control Systems (Oil &amp; Gas) 2</td>
<td>Physical Effects Modelling 2</td>
<td>Process Safety Management in Design &amp; Operations</td>
</tr>
<tr>
<td>Oil and Gas Lifecycle Hazards and Risks</td>
<td>Process Hazard Analysis (PHA)</td>
<td>What-If? Analysis</td>
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<td>Oil &amp; Gas and Process Industry QRA 2</td>
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## Nuclear

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<th>Course</th>
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<tr>
<td>Engineered Risk Control Systems and Performance (Nuclear)</td>
<td>Nuclear Probabilistic Safety Assessment (PSA)</td>
<td>Principles of Regulatory Systems</td>
</tr>
<tr>
<td>Implementation of a Regulatory Regime</td>
<td>Nuclear Reactor Basics</td>
<td>Radioactive Waste Management and Decommissioning</td>
</tr>
<tr>
<td>Nuclear Lifecycle Hazards and Risks</td>
<td>Nuclear Reactor Safety Principles</td>
<td>Radiological Protection</td>
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## Rail

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<th>Course</th>
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<tbody>
<tr>
<td>Common Safety Method 2</td>
<td>Rail Industry Hazards &amp; Risks 2</td>
<td>Rail Safety Analysis 2</td>
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## Maritime

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<tr>
<td>US MARAD-compliant CVSSA</td>
<td>Maritime Risk Management</td>
<td>Hydrogen Safety Assurance</td>
</tr>
<tr>
<td>Management of Disruptive Passengers</td>
<td>Port Facility Security Officer (PFSO)</td>
<td>Offshore Wind Farm Safety Assurance</td>
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## Qualifications:

1. Available as a Postgraduate Module (additional modules can be incorporated into corporate programmes)
2. Available as a TÜV Rheinland Risktec CPD
Asset Integrity Risk Management

What’s the purpose?
The purpose of the course is to provide an in-depth understanding of the ways to manage major incident risk throughout the asset lifecycle, from concept selection through operations to decommissioning. The course walks through the essentials of risk as a concept, and explains the processes and tools that companies are using today to prevent major incidents. Industry case studies are used to illustrate key issues.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Preventing major incidents by managing barriers
- Assuring plant performance
- Assuring people performance
- Assuring processes performance
- Reducing risk to As Low As Reasonably Practicable (ALARP)

After completing the module you should be able to:
1. Analyse the asset integrity risk management process throughout the asset lifecycle
2. Analyse the importance of assuring the integrity of engineered barriers (plant), competency of key personnel (people) and quality of procedures (processes) to prevent major incidents
3. Justify the approaches that are used to effectively reduce risks as low as reasonably practicable (ALARP)

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<th>Attendance only</th>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What’s the purpose?

Bowtie analysis (also known as barrier diagrams) is an increasingly popular approach to help manage risk. This course introduces the bowtie methodology and examines in detail the various bowtie analysis components. The course also provides a critical review of the method’s benefits, limitations and practical uses, with hands-on practice at applying the technique.

Who is this for?

Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?

- Introduction to risk assessment and bowties
- The bowtie method
- Assuring barrier integrity
- Effectiveness and ALARP for bowties
- Benefits and practical uses of bowties
- Facilitating bowtie workshops
- Bowtie software tools

After completing the course you should be able to:

1. Analyse hazard scenarios by applying the bowtie method and designing a bowtie diagram
2. Develop integrity assurance for bowtie barriers
3. Devise risk acceptance criteria for hazards in bowties

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<th></th>
<th>Hours</th>
<th>Delivery methods</th>
<th>Distance learning</th>
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<tbody>
<tr>
<td>Postgraduate</td>
<td>80</td>
<td>2 days, followed by assessment</td>
<td>8 weeks’ duration</td>
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<tr>
<td>Risktec CPD</td>
<td>20</td>
<td>2 days, followed by assessment</td>
<td>12 weeks’ duration</td>
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<tr>
<td>Attendance only</td>
<td>15</td>
<td>2 days</td>
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What prior study is recommended?

Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Hazard Identification.
BowTieXP Software (Basic & Advanced)

What’s the purpose?
The purpose of this course is to enable students to effectively use the BowTieXP software in support of a bowtie analysis. It is expected that students will have prior knowledge of the bowtie method either from industry experience or from attendance on the recommended prior study.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

<table>
<thead>
<tr>
<th>What does it cover?</th>
<th>After completing the course you should be able to:</th>
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</thead>
<tbody>
<tr>
<td>• Summary of the bowtie approach</td>
<td>1. Understand the quality of data to be input into a completed fit-for-purpose bowtie</td>
</tr>
<tr>
<td>• Introduction to BowTieXP and where it fits in</td>
<td>2. Effectively use the BowTieXP software in support of a bowtie analysis including linking of bowties to supporting tasks, equipment, documentation, etc</td>
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<tr>
<td>• Creating a new database / opening an existing database</td>
<td>3. Use the software to produce reports and other forms of output</td>
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<tr>
<td>• Creating a new bowtie, editing an existing bowtie, copying and pasting</td>
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<tr>
<td>• Creating activities and elements</td>
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<td>• Linking controls to critical roles</td>
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<td>• Creating reports and printing professional reports</td>
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<td>• Shortfalls and remedial actions, review and sign-off</td>
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<tr>
<td>• Benefits and practical uses</td>
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<th>Attendance only</th>
<th>Delivery method: face-to-face</th>
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<td>1 day (basic), 2 days (advanced)</td>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What’s the purpose?
The purpose of the course is to provide knowledge and understanding of Business Continuity Management (BCM) and the role it plays in organisations of various sizes in readiness to manage threats which could disrupt continued operation. This course includes how to identify threats and undertake a business impact assessment and manage its findings. It also covers best practices for controlling incidents and developing a Business Continuity Plan.

Who is this for?
Managers, engineers, operators, BCM practitioners, HSE advisors and risk management practitioners.

What does it cover?
- Introduction to BCM
- BCM systems and the lifecycle approach
- Policy and programme management
- Embedding BCM
- Analysis
- Design
- Implementation
- Validation

After completing the course you should be able to:
1. Demonstrate comprehensive knowledge of the principles of BCM, discuss the benefits, and justify how BCM adds value to an organisation
2. Interpret BCM standards and good practice, and apply the lifecycle approach to BCM
3. Critically review the internal and external threats which impact on business operations, and construct a business risk analysis/impact assessment
4. Illustrate how incidents can be controlled in the event of threat realisation
5. Design an effective Business Continuity Plan for an organisation

Delivery method: face-to-face

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<th>Attendance only</th>
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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What's the purpose?
The course provides an overview of the Common Safety Method for Risk Evaluation and Assessment and practical training on implementation in engineering rail projects. It provides background on approaches to the application of CSM for legal compliance. This involves studying the industry regulatory regimes and case studies applying to UK rail projects, and developing an understanding of the risk assessment process for all changes to the railway.

Who is this for?
Managers, engineers and HSE professionals as well as individuals new to the rail industry who require an overview of the industry’s risks.

What does it cover?
- Introduction to Risk Management
- CSM Overview, Context and Significance Decision
- Implementation of CSM

After completing the course you should be able to:
1. Demonstrate expertise in safety management using key terms such as “hazard”, “consequence”, and “risk”
2. Understand Tolerability, ALARP and compliance with UK legislation
3. Evaluate the significance of a change and the interaction with Hazard Identification techniques
4. Understand the elements of the Common Safety Method Risk Evaluation and Assessment process

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<th>Hours</th>
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<tr>
<td></td>
<td></td>
<td>Face-to-face</td>
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<tr>
<td>Risktec CPD</td>
<td>12.5</td>
<td>1 day, followed by assessment</td>
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<td>Attendance only</td>
<td>7.5</td>
<td>1 day</td>
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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
What's the purpose?
The purpose of this course is to provide the theory and practice that underpins safety culture and related workplace behaviour, as well as managing competency. It aims to promote consideration, discussion and evaluation of the inter-connection between culture, behaviour and competency and their relative importance within the workplace. The course promotes the application of this knowledge in workplace situations and highlights the importance of the topic in the field of risk and safety management.

Who is this for?
Managers, HSE advisors and risk management practitioners.

What does it cover?
- Competency management
- Training and resourcing
- Organisational culture
- Human behaviour
- Organisational change management
- Examples of major accidents / accident causes

After completing the course you should be able to:
1. Determine and justify the elements of, and requirements for, competency management and evaluate the relationship between competency, training and resourcing
2. Critically review the importance of culture and behaviour in the workplace
3. Demonstrate how culture, behaviour and competency can be successfully managed in the workplace

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<tr>
<th>Delivery methods</th>
<th>Risktec CPD</th>
<th>Hours</th>
<th>Face-to-face</th>
<th>Distance learning</th>
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<tbody>
<tr>
<td></td>
<td>Risktec CPD</td>
<td>20</td>
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<td>Attendance only</td>
<td>15</td>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, HSE Management Systems.
What's the purpose?
To equip personnel who are appointed as Port Facility Security Officers to undertake their role in accordance with the ISPS code and to achieve qualification for Maritime and Transport Security (MTS) Division compliance.

Who is this for?
Those appointed as PFSOs, those who may be required to deputise as a PFSO and managers who have responsibility for Port Facility Security Officers (desirable).

What does it cover?
- Threats to the maritime industry
- The impact of terrorism on legislation
- ISPS code & amendments to SOLAS
- National and EU legislation
- Principles of security, Port security organisation
- Responsibilities of the PFSO, CSO, SSO
- Port Facility Security Assessment, process and plans
- The Declaration of Security
- Terrorist weapons & characteristics
- Access, Screening & Search Procedures
- Security & Surveillance Equipment
- Security Records & Documentation
- Training Requirements
- Port-Ship Interface (Documentation)
- Circumventing Security Measures

After completing the course you should be able to:
1. Explain the roles and responsibilities of a Port Facility Security Officer
2. Apply the principles of undertaking a security risk assessment
3. Identify the security threats to the industry
4. Outline the relevant national and international legislation and regulations
5. Produce a port facility security plan and undertake port facility security assessments
6. Explain ship security measures

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<th>Attendance only</th>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Knowledge of the ISPS code.
What’s the purpose?
The purpose of this course is to enable students to understand and apply the principles of emergency response planning and crisis management. It considers the need for emergency and crisis response planning and an integrated approach to emergency management. Emergency organisation and procedures are also studied.

Who is this for?
Managers, supervisors and HSE professionals who may be required to develop emergency or crisis response plans or exercises.

What does it cover?
- Emergency management basics
- Emergency anticipation and assessment
- Emergency prevention and mitigation
- Emergency preparations - planning, organisation, training, documentation, mutual aid, drills & exercises, etc.
- Emergency response and recovery
- Crisis management overview

What does it cover? (continued)
- After completing the course you should be able to:
  1. Define the requirements and importance of Emergency and Crisis Response Management
  2. Discuss aspects of integrated emergency management
  3. Generate appropriate emergency and crisis response documentation

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
Engineered Risk Control Systems (Oil and Gas)

What’s the purpose?
This course provides an understanding of engineered risk control systems and the need for performance standards and technical integrity verification schemes. This involves exploring the concept of engineered risk control systems and the need for identifying Safety and Environmentally Critical Elements (SECEs) and performance standards. Assuring and verifying performance against the performance standards will be discussed as an integral part of technical integrity assurance throughout an asset’s lifecycle.

Who is this for?
Managers, discipline engineers, operators and HSE professionals required to identify SECEs, develop performance standards and verification schemes and implement performance assurance tasks.

What does it cover?
- Introduction to ERCSs
- Identification of ERCSs
- Criticality ranking
- Performance standards
- Performance assurance & verification
- Performance monitoring
- Integrity throughout facility lifetime

After completing the course you should be able to:
1. Analyse process plant to logically deduce relevant Engineered Risk Control Systems (ERCSs/SECEs)
2. Devise performance requirements/standards of ERCSs/SECEs
3. Illustrate how ERCSs/SECEs contribute to sustaining technical integrity over the lifetime of an asset

<table>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
What’s the purpose?
The aim of this course is to provide an understanding of engineered safeguard systems and the need for performance requirements and standards, performance assurance and technical integrity verification schemes with a particular emphasis on the nuclear industry.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Engineered safeguard systems
- Defining performance standards
- Functional requirements
- Availability, reliability and survivability
- Interdependencies
- Performance assurance and verification
- Technical integrity assurance
- Material selection
- Design reviews
- Fabrication tests, certification, etc.
- Construction reviews and inspections
- Commissioning tests
- Preventative maintenance systems

After completing the course you should be able to:
1. Analyse a nuclear plant to logically deduce the relevant engineered safeguard systems
2. Devise performance standards for nuclear safeguards
3. Illustrate how engineered control systems contribute to technical integrity over the lifetime of the nuclear plant

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
What’s the purpose?
The purpose of this course is to provide an overview of the Enterprise Risk Management (ERM) framework and process and the approaches for embedding ERM in your organisation and developing a strong risk culture.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Business drivers for ERM
- ERM principles
- Framework, process and limitations
- Risk identification and analysis
- Risk evaluation and treatment
- Risk monitoring and review
- Risk communication and consultation
- Risk culture
- Implementing the ERM framework

After completing the course you should be able to:
1. Understand what ERM means in the context of a business
2. Apply the steps of the ERM process
3. Assess the framework requirements for implementing ERM in the organisation
4. Define the risk culture and decision-making attributes required to manage risk within your business

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Fault Tree and Event Tree Analysis

What’s the purpose?
To enable participants to understand the principles of fault and event tree analysis and to perform their own assessments. The course looks at the development of fault tree and event tree models and populating them with suitable reliability data, human errors and dependent failures. It then considers quantification of the models and how they can be used to evaluate potential improvements.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Introduction to Fault Tree Analysis
- Fault Tree construction
- Minimal cut sets
- Basic event reliability data
- Dependent failures and human errors
- Fault Tree quantification
- Fault Tree analysis advantages & disadvantages
- Introduction to event tree analysis
- Event Tree construction and quantification
- Fault and Event Tree software

After completing the course you should be able to:
1. Consider when it is appropriate to apply fault tree analysis and event tree analysis
2. Design and analyse fault tree models incorporating appropriate reliability data for components, human error and dependent failures
3. Generate and analyse event tree models

What does it cover?

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<td>Hours</td>
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<td>Risktec CPD</td>
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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
Functional Safety of Safety-Related Systems

What’s the purpose?
This course enables students to understand and apply the principles of functional safety to the development and assessment of safety systems, based on the IEC 61508 standard. The course illustrates the primary elements of the Safety Lifecycle and how these are applied to the development of safety systems. It also covers the assessment of safety systems to confirm that functional requirements and risk reduction targets have been achieved. Students will develop expertise in the application of the techniques necessary to specify, implement and assess safety systems to meet the requirements of IEC 61508.

Who is this for?
Electrical and mechanical engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Introduction to functional safety – background, terminology and aims
- The Safety Lifecycle (IEC 61508 view)
- Hazard & risk analysis techniques
- SIL selection (setting targets and requirements)
- Safety requirements specification development
- SIL and the design process
- Beyond design lifecycle phases
- Compliance demonstration
- Safety/project lifecycle management

After completing the course you should be able to:
1. Define safety functions and target Safety Integrity Level (SIL) requirements which will reduce the associated risks to a tolerable level
2. Apply the analysis methodologies to ensure that, when implemented, the safety systems achieve specified risk reduction targets
3. Logically deduce how the level of risk reduction achieved by a safety system could be improved and when risk has been reduced to As Low As Reasonably Practicable (ALARP)

Delivery methods

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Hazard Identification.
What’s the purpose?
This course provides an understanding and awareness of the tools and techniques available for hazard identification, where they can be applied and what limitations may exist. Students will be introduced to the concept of HAZID, including the HAZID team and process. A range of other hazard identification techniques will also be introduced.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Basic concepts
- Overview of hazard identification techniques
- Hazard identification through the project lifecycle
- Failure Modes and Effects Analysis (FMEA)
- Hazard and Operability (HAZOP) studies
- HAZID/checklist approach
- HAZID versus HAZOP
- Making recommendations

After completing the course you should be able to:
1. Assess the role of hazard identification in the risk management process
2. Critically review the tools and techniques available to carry out effective hazard identification at each lifecycle stage
3. Design a fit-for-purpose hazard identification study

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
HAZOP Leader (TÜV)
ID No. 0000080430

What’s the purpose?
To cover the knowledge, skills and behaviours required for the successful leadership and management of HAZOP studies. This HAZOP Leader (TÜV) course is the only training for HAZOP leaders worldwide that is certified by an accredited body (PersCert TÜV). Participants will secure a formal certification in their ability to lead process safety-related HAZOP workshops.

Who is this for?
Anyone with 5 years’ experience of the HAZOP technique who is required to lead HAZOP studies, and highly-experienced HAZOP leaders seeking an internationally-recognised certification.

What does it cover?
- HAZOP leader role and responsibilities
- Facilitating skills
- Preparation and noding
- Hazard scenario development and safeguards
- Risk assessment and recommendations
- Human factors and accident causation
- Other HAZOP applications
- Other techniques and LOPA
- HAZOP company and regulatory requirements
- Examination

After completing the course you should be able to:
1. Demonstrate mature evaluation of the HAZOP technique against the wider safety context, including the regulatory environment and other safety methods.
2. Apply multi-disciplinary engineering knowledge to lead and challenge the HAZOP study team.
3. Assess the importance of human factors to a successful HAZOP study in context of the design and operation of process facilities.
4. Devise and manage a HAZOP meeting, demonstrating a comprehensive and rounded application of different skills and capabilities to lead both technically and professionally.

What prior study is recommended?
A minimum of 5 years’ experience in the HAZOP technique, and a university degree (master’s or bachelor’s degree in engineering or science) or equivalent engineer-level responsibilities certified by employer.

Delivery methods

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
Hazard and Operability (HAZOP) Study

What’s the purpose?
To gain an understanding of the technique, application and limitations of the HAZOP study methodology, one of the most commonly used hazard identification methods. This course does not provide detailed HAZOP facilitator training but does cover the skills needed and the work that the facilitator must do as part of the HAZOP study. Students will have the opportunity to practise the technique.

Who is this for?

What does it cover?
- Introduction to risk assessment
- Basic engineering terminology
- Process safety incidents – lessons learned
- HAZOP: what, when, how, guidewords and parameters, nodding, teams, roles and responsibilities
- Recording methods, software, reporting and close-out
- Overview of the LOPA technique
- Major HAZOP studies, minor modification studies
- Common failings in HAZOPs, Limitations of HAZOPs
- Leading HAZOP teams
- Other forms of HAZOP: procedures, batch operations

After completing the course you should be able to:
1. Critically review the HAZOP technique and examples of output
2. Analyse how the HAZOP technique can be applied at the different stages of a project’s lifecycle such as FEED, detailed design, revalidation and decommissioning
3. Prepare for a HAZOP workshop, determine the skills and actions necessary to lead a HAZOP and how to generate a HAZOP report

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Hazard Identification.
What’s the purpose?
Accidents cost money, whether from harm to people or the environment, damaged plant or lost product. The immediate cost of major accidents is very visible, however the nature and extent of the loss from accidents of a more routine nature is less well understood. Often the indirect costs of an accident may be much greater and can significantly affect the profitability of operations. The course sets out to explain how accident costs may be calculated, and hence allow better determination of the benefit of measures designed to prevent future accidents.

Who is this for?
Managers, HSE advisors, financial advisors and risk management practitioners.

What does it cover?
- Benefits of incident investigation and calculation of costs
- Why do we investigate incidents?
- The incident investigation process
- The difference between direct and indirect costs
- Examples of accident costs
- Reference costs associated with incidents
- Reporting structure for incident costs
- Accident cost calculation exercises

After completing the course you should be able to demonstrate:
1. Increased awareness of the benefits associated with investigation of incidents, and the calculation of incident costs
2. Increased awareness of incident investigation and root cause analysis, including the BSCAT methodology
3. Understanding of the process to be applied to calculate the costs of incidents
4. Awareness of incident cost references
5. Practical experience of calculating the costs

Attendance only

Delivery method: face-to-face
1 day

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
What’s the purpose?
The purpose of the course is to enable the participants to acquire adequate competencies for managing HSE risks at all stages of projects.

Who is this for?
Managers, HSE advisors, project managers and risk management practitioners.

What does it cover?
- Project risk management principles and terminology
- Drivers of project risk management
- Examples of major project failures
- Key HSE legislation, regulations and standards
- Elements of the project risk management process
- Risk management methodologies, tools, techniques and studies for identifying and assessing HSE risks
- Strategies for controlling and reducing risk; preventing HSE events during implementation of projects, identifying risks and defining measurements and resources for HSE risk control
- Human elements: project culture and behaviours
- Periodic risk monitoring, review and reporting, including progress monitoring of actions

After completing the course you should be able to:
1. Analyse the drivers for managing project risks
2. Understand the components of the project risk management process
3. Compare and contrast the key tools and techniques available to identify and assess project risks
4. Understand how effective project risk management cost-effectively implements measures that reduce HSE residual risk to an acceptable level

Delivery method: face-to-face

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
Health, Safety and Environmental (HSE) Management Systems

What’s the purpose?
A formal management system or framework can help an organisation to manage Health, Safety and the Environment (HSE). The aim of this course is to deliver an understanding of what constitutes an HSE Management System (HSE MS), and how these systems are applied in different hazardous industries. Legislative requirements and international standards for an HSE MS are also discussed. The course examines issues associated with the documentation and the human elements for the successful implementation of an HSE MS.

Who is this for?
Managers, HSE advisors and risk management practitioners.

What does it cover?
- Definition of an HSE MS
- Elements of an HSE MS
- Guidance and legislation
- Implementation aspects
- Documenting and implementing the HSE MS

After completing the course you should be able to:
1. Discuss the key factors to be considered when developing an HSE MS
2. Assess the role of HSE MSs in reducing the probability and consequences of major accidents
3. Examine issues associated with the implementation of HSE MSs

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Delivery methods

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
HSSE Leadership for Managers

What’s the purpose?
This course aims to build an emotional commitment for HSSE and enables managers to effectively lead HSSE as an integral part of the business. The course considers the interactions between the group, the individual, business systems and values. It illustrates how bringing these elements together enables insights for the effective leadership of a proactive and ‘just’ HSSE culture and improved organisational risk management.

Who is this for?
Line and functional senior and middle managers working in high hazard industries. Worksite supervisors should attend the HSSE Leadership for Supervisors course.

What does it cover?
- Courage for HSSE leadership
- The leader’s role in preventing major accidents
- An organisation’s HSSE cultural journey
- Understanding motivation and behaviour
- A just HSSE culture and managing culpability
- HSSE as a value
- Leadership in reducing HSSE risk and incidents
- Qualities and skills of leaders
- Personal commitment and leading change

After completing the course you should be able to:
1. Lead positive HSSE cultural change within your team
2. Become a champion for a proactive and just HSSE culture
3. Commit to implementing your own personal HSSE leadership approach

What prior study is recommended?
Managerial experience.

Delivery method: face-to-face
Attendance only
1, 2 or 3 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
HSSE Leadership for Supervisors

What’s the purpose?
This course aims to build an emotional commitment for HSSE and enables supervisors to effectively lead HSSE as an integral part of their day-to-day activities. The course considers the interactions between the group, the individual, business systems and values. It illustrates how bringing these elements together enables insights for the effective supervisory leadership of a proactive and ‘just’ HSSE culture and improved organisational risk management.

Who is this for?
Front-line worksite supervisors, especially those working in high hazard industries. Managers should attend the HSSE Leadership for Managers course.

What does it cover?
- Courage for HSSE leadership
- The supervisor’s role in preventing incidents
- An organisation’s HSSE cultural journey
- Understanding motivation and behaviour
- HSSE as a value
- Leadership in reducing HSSE risk and incidents
- Qualities and skills of leaders
- Important aspects of supervision
- Personal commitment and leading change

After completing the course you should be able to:
1. Lead positive HSSE cultural change within your team
2. Become a champion for a proactive and just HSSE culture
3. Commit to implementing your own personal HSSE leadership approach

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Supervisory experience.
HSSE Risk Management for Managers

What’s the purpose?
The course aims to describe how the risk management process defined in ISO 31000:2009 applies to health, safety, security and environmental risks. The course enables managers to understand each element of the risk management process and their role in ensuring its effective implementation.

Who is this for?
Line and functional senior and middle managers working in high hazard industries.

What does it cover?
- Drivers for HSSE risk management
- HSSE risk management process
- HSSE risk definitions
- HSSE risk identification and analysis
- HSSE risk evaluation and treatment
- HSSE risk monitoring and review
- HSSE risk communication and consultation
- HSSE leadership expectations of managers

After completing the course you should be able to:
1. Evaluate the various drivers which cause organisations to manage risk
2. Define the various types of HSSE risk
3. Deconstruct the HSSE risk management process into its constituent components
4. Describe the various approaches for analysing HSSE risks
5. Critically analyse risk reduction options in order to implement suitable and sufficient risk controls
6. Develop HSSE leading and lagging performance indicators
7. Communicate risk information to stakeholders
8. Evaluate the role of managers in leading effective HSSE risk management

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Human Factors in Design and Operations

What’s the purpose?
The purpose of this course is to explain how an understanding of human abilities, limitations and needs can be applied to the design and assessment of tasks, equipment, systems and processes, in order to reduce human error, improve safety and increase efficiency. It also highlights how and why human errors occur, and describes the methods, tools and techniques that can be used to identify, analyse and reduce them. Key Human Factors tools and methodologies will be demonstrated through the use of real-world practical examples from high hazard industries.

Who is this for?
Managers, supervisors and HSE professionals.

What does it cover?
- Introduction to Human Factors
- Human Factors Integration (HFI)
- Human Factors support to the design lifecycle for high hazard industries
- Defining human error
- Human error and violations
- Human Reliability Analysis (HRA)

After completing the course you should be able to:
1. Analyse the role of HF in systems engineering in order to achieve safe and effective designs, systems and processes
2. Evaluate the human characteristics which influence a user’s experience of the workplace environment to ensure it is comfortable, healthy, safe and effective (accounting for physical and psychological capabilities and limitations)
3. Evaluate human error types (including violation) and their potential causes
4. Appraise human reliability and performance using appropriate methods in order to develop measures to reduce the likelihood of human error

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.

risktec.tuv.com
training@risktec.tuv.com
+44 (0)1925 611200
What’s the purpose?
This Chartered Institute of Ergonomics & Human Factors (CIEHF) Accredited Short Course is designed to provide attendees with the necessary baseline knowledge and skills to be able to start undertaking Safety Critical Task Analysis (SCTA).

Who is this for?
Employees of companies who have a regulatory requirement to carry out SCTA. Anyone who may be required to plan, facilitate and/or take part in SCTA, including Health & Safety Managers, Process Safety specialists, training managers, supervisors, plant operators and maintainers.

What does it cover?
- What is Human Factors?
- Key Human Factors legislation and guidance – UK oil & gas & chemicals sector
- Human errors and violations
- Introduction to Performance Influencing Factors (PIFs)
- Introduction to human failure identification & assessment
- The SCTA process
- Safety Critical activity screening
- Detailed SCTA and Human Failure Assessment (HFA)
- Successful implementation of SCTA

After completing the course you will be able to:
1. Define what is meant by Human Factors
2. Understand the key legislation and guidance that is relevant to the application of Human Factors within the UK oil & gas sector
3. Understand how human failures can contribute to accidents, and be able to identify credible human errors and violations
4. Identify PIFs that can make human failures more likely, and understand how systems, tasks and processes can be designed to minimise their effects
5. Understand the process to be followed for human failure identification and assessment, and the different approaches that are available
6. Understand the detailed steps involved in SCTA
7. Demonstrate experience in working through the SCTA process, including initial screening of activities and detailed HFA.

Delivery methods: face-to-face or distance learning
- Standard course 1.5 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Some understanding of health & safety risk assessment and risk management principles is desirable.
Hydrogen Safety Assurance

What’s the purpose?
This course introduces the practical tools and techniques to allow hydrogen equipment and facility designers and developers to build a robust yet pragmatic safety assurance framework and apply this to ensure and demonstrate that they are reducing risk to As Low As Reasonably Practicable (ALARP). It builds on tried and tested approaches from other more mature industries, adapting these where necessary to suit the specific characteristics and challenges of hydrogen as an energy vector. The objective is to introduce the challenge that hydrogen presents, highlighting both commonalities and differences between hydrogen and well-understood hydrocarbons.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners involved in hydrogen energy projects.

What does it cover?
- Introduction to hydrogen
- Risk assessment for hydrogen
- Hazard identification
- Safety studies (HAZOP/LOPA/SIL)
- Relevant standards and regulations
- QRA & consequence modelling & assessment
- Emergency response and crisis management
- Safety Management Planning

After completing the module you should be able to:
1. Have an understanding of the hydrogen hazard, its specific characteristics and challenges.
2. Understand how established risk assessment tools and techniques can be applied to hydrogen schemes, with appreciation of the limitation of these techniques.
3. Define the purpose and benefits of the formal demonstration that risks are managed to ALARP, and understand how this can be best achieved.

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Implementation of a Regulatory Regime

What’s the purpose?
To provide participants with a high-level appraisal of how regulatory assessment and scrutiny is implemented, promoting effective safety assurance.

Who is this for?
Managers, engineers, operators, safety advisors and risk management practitioners.

What does it cover?
- Implementation of legal and regulatory frameworks
- Regulatory performance
- Safety assessment
- Key nuclear regulation areas
- Inspection and enforcement
- Developing safety

After completing the course you should be able to:
1. Analyse the development of, and compliance with, legislation and standards
2. Critically review how regulators’ performance and effectiveness is reviewed (how to regulate the regulator)
3. Explain the management of regulatory safety assessments - when, where, how
4. Assess implementation issues in regulatory inspection, auditing, investigation and enforcement
5. Examine the regulator’s role in promoting safety.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.

Delivery method: face-to-face
Attendance only
1 day

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
Incident Investigation and Analysis

What's the purpose?
This course provides an awareness and understanding of incident investigation and analysis, including why we need to investigate incidents. The stages of incident investigation are discussed: immediate actions in the event of an incident; initiating the investigation; collecting, organising and analysing data; identifying corrective and preventive actions; reporting the incident and learning from it.

Who is this for?
Managers, supervisors and HSE professionals who may be called on to participate in incident investigations.

What does it cover?
- Introduction
- Immediate actions in the event of an accident
- Planning the investigation
- Collecting data
- Data organisation/analysis
- Corrective actions
- Concluding the analysis

After completing the course you should be able to:
1. Demonstrate a thorough grounding in the underlying theories behind accident cause analysis
2. Apply the investigation and analysis process to determine the sequence of events and the causes of an incident
3. Critically analyse published incident and accident reports including the recommendations

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
Layers of Protection Analysis (LOPA)

What’s the purpose?
To gain an understanding of the technique, application and limitations of LOPA. This course covers the different variations of the LOPA methodology: single cause, multiple cause, simple and complex. It does not provide detailed LOPA facilitator training but does cover the skills needed and the work that the facilitator must do as part of the LOPA.

Who is this for?
Project Managers, Operation Managers, Process Engineers, Operators, HSE advisors and risk management practitioners.

What does it cover?
- LOPA terminology
- Information required for LOPA and review of HAZOP worksheets
- Hazard consequences and target mitigated event likelihood
- Hazard causes and frequencies
- Independent protection layers and probability of failure on demand
- Conditional/event modifiers
- Application of LOPA variations
- Carrying out SIL Classification using LOPA
- Recording methods, software and reporting
- Common failings and limitations of LOPA
- Leading LOPA teams

After completing the course you should be able to:
1. Apply the different variations of the LOPA technique
2. Critically review the LOPA technique and examples of output
3. Analyse how the LOPA technique can be applied at the different stages of a project's lifecycle such as FEED, detailed design, revalidation and decommissioning
4. Prepare for a LOPA workshop, determine the skills and actions necessary to lead a LOPA and how to generate a LOPA report

Delivery method: face-to-face
Attendance only

2 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Hazard Identification, HAZOP Study
Maritime Risk Management

What’s the purpose?
The aim of the course is to introduce the concept of risk management and its application to maritime operations. The requirements of maritime laws, regulations and guidelines are covered, as well as approaches to identifying, assessing and managing the specific risks associated with maritime operations.

Who is this for?
Marine operations managers, marine engineers, project advisors and risk management practitioners.

What does it cover?
- Aims and introductions
- Overview of maritime operations
- Overview of risk, hazards and consequences in maritime operations
- The risk management process
- Overview of maritime laws, regulations and codes
- Maritime accidents and their causes
- Example approaches to maritime risk management - using the bowtie diagram

After completing the course you should be able to:
1. Critically review, from an HSE perspective, the principal types of operations and activities which exist within the maritime industry
2. Apply the principles of risk management to maritime operations to identify typical hazards and evaluate risks
3. Consider maritime legislation and its impact upon operations

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Management of Disruptive Passengers

What’s the purpose?
The purpose of the course is to equip personnel who may be required to deal with disruptive passengers to manage any such incident safely, with due regard to customer care and the relevant law and with the minimum of disturbance to other passengers.

Who is this for?
Those personnel with dedicated security duties on board ship; deck officers, pursers, masters at arms.

What does it cover?
- The operational framework: legal aspects, both maritime and land instruments, including human rights, equality and data protection legislation, as well as relevant civil law instruments
- Communication and conflict management (developed under UK security industry authority guidance)
- Unarmed defensive techniques and physical intervention, including physical intervention, restraints, handcuffing (rigid handcuffs), safe movement skills and custody procedures
- The physical skills trainers are all accredited UK Home Office instructors with police and prison service backgrounds.

After completing the course you should be able to:
1. Apply essential conflict resolution skills to de-escalate a potential confrontational situation
2. Utilise psychological techniques to intervene in a conflict in a measured and practical way
3. Explain the conflict resolution model
4. Identify when communication skills are no longer working and adopt a tactical and strategic approach
5. Understand the importance of the ethical appeal
6. Conduct a physical intervention (as a last resort)
7. Explain the custody, care and control process of an individual, with human rights at the forefront of the process
8. Explain the documentation processes
9. Conduct debriefs of staff members involved in an incident.

What prior study is recommended?
No prior study is required.

Attendance only

<table>
<thead>
<tr>
<th>Delivery method: face-to-face</th>
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<tbody>
<tr>
<td>4 days (for ships’ officers as primary responders or security team leaders) onshore</td>
</tr>
<tr>
<td>4 hours (each seminar) for crew members on board. An overview of the knowledge and techniques required to support the primary responders.</td>
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</tbody>
</table>

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
Maritime Risk Management

What’s the purpose?
The aim of the course is to introduce the concept of risk management and its application to maritime operations. The requirements of maritime laws, regulations and guidelines are covered, as well as approaches to identifying, assessing and managing the specific risks associated with maritime operations.

Who is this for?
Marine operations managers, marine engineers, project advisors and risk management practitioners.

What does it cover?
- Aims and introductions
- Overview of maritime operations
- Overview of risk, hazards and consequences in maritime operations
- The risk management process
- Overview of maritime laws, regulations and codes
- Maritime accidents and their causes
- Example approaches to maritime risk management - using the bowtie diagram

After completing the course you should be able to:
1. Critically review, from an HSE perspective, the principal types of operations and activities which exist within the maritime industry
2. Apply the principles of risk management to maritime operations to identify typical hazards and evaluate risks
3. Consider maritime legislation and its impact upon operations

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<th>Attendance only</th>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What's the purpose?
The course provides students with an overview of the lifecycle of a nuclear power facility, its risks and hazards, risk-related regulations and the standard risk mitigation techniques.

Who is this for?
Managers, engineers and HSE professionals who need to lead or undertake risk management processes for their organisation and facilities, and individuals new to the nuclear industry who require an overview of the industry’s risks.

What does it cover?
- Introduction to the nuclear lifecycle
- Risk and safety regulations in the nuclear industry
- Hazards and controls in fuel manufacture and transport
- Hazards and controls in reactor operation
- Hazards and controls in transport and storage of irradiated fuel
- Hazards and controls in reprocessing irradiated fuel
- Hazards and controls

After completing the course you should be able to:
1. Critically review the legal and regulatory obligations placed on the owners of a nuclear plant to demonstrate that the risks posed to people and the environment by operation of their plant are both tolerable and “as low as reasonably practicable”
2. Identify and assess the risks associated with nuclear hazards for a process or facility relevant at any stage of the nuclear cycle
3. Discuss effective means of avoiding each hazard or mitigating its consequences

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Risk Reduction and ALARP

Delivery method: face-to-face
Attendance only
2 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
What's the purpose?
This course enables students to understand and apply Probabilistic Safety Assessment (PSA) techniques with particular relevance to the nuclear industry. It provides an overview of nuclear industry safety assessment guidelines and principles. Reliability theory and system modelling are covered, including event tree and fault tree analysis. Consequence modelling in the nuclear industry and typical hazard scenarios such as fire, aircraft crash and natural hazards are also discussed. The course includes application of PSA results and demonstration of ALARP.

Who is this for?
Managers, engineers and HSE professionals who need to lead or undertake risk management processes for their organisation and facilities, and individuals new to the nuclear industry who require an overview of the industry’s risks.

What does it cover?
- Introduction to safety assessment in the nuclear industry
- Safety assessment, guidelines and principles
- Reliability theory and concepts
- System reliability and modelling
- Fault and hazard identification
- Frequency analysis
- Supporting data
- Consequence analysis in the nuclear industry
- Hazards PSA
- Application of results, including ALARP demonstration

After completing the course you should be able to:
1. Deduce the PSA techniques appropriate to a real-life nuclear plant
2. Evaluate the risks associated with the operation and design of the plant
3. Identify and critically examine any additional measures that may be required to ensure that the risks are both tolerable and ALARP

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Hazard Identification, Fault Tree & Event Tree Analysis.
Nuclear Reactor Basics

What’s the purpose?
To provide participants with a high level appraisal of the principles which underpin the design and safe operation of nuclear reactors, highlighting aspects which are relevant to regulatory assessment and scrutiny.

Who is this for?
Managers, engineers, operators, safety advisors and risk management practitioners.

What does it cover?
- Overview of nuclear and reactor physics
- Reactor design and operation
- Reactor safety
- Assurance
- Research and test reactors

After completing the course you should be able to:
1. Explain key elements of nuclear and reactor physics
2. Assess the design and operation of nuclear reactors from a regulatory perspective
3. Critically review the key engineering and technical issues which underpin nuclear reactor safety
4. Explain the key systems and processes for reactor safety assurance
5. Discuss the role and relevance of research reactors

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<th>Attendance only</th>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Nuclear Reactor Safety Principles

What’s the purpose?
To provide participants with a high-level appraisal of nuclear reactor safety principles and associated regulatory issues.

Who is this for?
Managers, engineers, operators, safety advisors and risk management practitioners.

What does it cover?
- National and international standards
- Legislative and regulatory framework
- Management of nuclear reactor risk
  - Risk categorisation
  - Defence in depth
- Reactor hazards and safety barriers
  - Core inventory
  - Barriers to release
- Nuclear reactor siting: safety considerations
  - Siting evaluation criteria
  - Evaluation of external hazards
  - Potential impact of reactor accident
- Principles of reactor accident management and emergency response

After completing the course you should be able to:
1. Interpret nuclear reactor safety principles enshrined in standards and legislation
2. Consider management of risks from nuclear reactors
3. Assess the nature of reactor hazards and inherent safety
4. Critically review principles of nuclear reactor siting: criteria, hazards, impact and emergency control

Attendance only

Delivery method: face-to-face
1 day

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Offshore Wind Farm Safety Assurance

What’s the purpose?
The aim of this course is to introduce the concept of HSE risk management within the offshore wind industry, providing participants with a level of understanding of risk management principles commensurate with the magnitude of risks associated with this industry. It introduces practical tools and techniques to ensure offshore wind projects are conceived and executed safely and uses lessons learned from other more mature industries to establish an outline framework for a robust safety justification for an offshore wind farm.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Wind industry sources of risk
- Relevant regulations
- Risk Management through the project lifecycle
- Overview of risk assessment tools and techniques
  - Hazard Identification
  - Risk Assessment
  - QRA
  - Risk Reduction & ALARP
  - Asset Integrity Management
  - Safety Cases

After completing the course you should be able to:
1. Apply appropriate risk assessment tools to situations relevant to the offshore wind industry
2. Apply the ALARP concept and conduct an ALARP assessment to an appropriate level of detail
3. Define the role and need for a Safety Case in the offshore wind industry

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What's the purpose?
The purpose of this course is to enable students to understand and apply QRA techniques with particular relevance to the oil and gas and process industries. Participants will be given an opportunity to conduct QRA for oil and gas and process facilities. The course also covers risk criteria, application of the ALARP principle, sensitivity analysis and cost benefit analysis.

Who is this for?
Managers, engineers, HSE advisors and risk management practitioners.

What does it cover?
- Introduction to QRA
- Identify release scenarios
- Frequency assessment, event trees
- Consequence modelling (including immediate and time-dependent effects)
- Risk analysis
- Non-process hazards
- Risk criteria
- Sensitivity studies
- QRA software

After completing the course you should be able to:
1. Design QRA models incorporating appropriate input data and assumptions
2. Use QRA to analyse the risk to personnel
3. Compare QRA results with criteria and use to devise and evaluate potential risk reduction measures

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<th></th>
<th>Hours</th>
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<tr>
<td>Risktec CPD</td>
<td>20</td>
<td>2 days, followed by assessment</td>
<td>12 weeks’ duration</td>
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<td>Attendance only</td>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Oil and Gas and Process Industry Risk Studies

What’s the purpose?
The course provides an introduction to and understanding of the various types of specialist risk study which may be carried out for an oil and gas or process industry facility or operation. It includes QRA (which is covered in more detail in a separate course), Escape, Evacuation and Rescue Analysis (EERA), TR Impairment Assessment (TRIA), Emergency Systems Survivability Analysis (ESSA), and dropped object analysis.

Who is this for?
Managers, discipline engineers and HSE and reliability professionals seeking to improve asset performance.

What does it cover?

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<thead>
<tr>
<th>What does it cover?</th>
<th>After completing the course you should be able to:</th>
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<tbody>
<tr>
<td>• Introduction to risk studies</td>
<td>1. Critically review the use of specialist risk studies in the oil, gas and process industries</td>
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<tr>
<td>• Fire and Explosion Risk Assessment (FERA)</td>
<td>2. Apply specialist risk studies to simple oil, gas and process industry operations to analyse the risks to personnel</td>
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<tr>
<td>• Smoke and gas dispersion</td>
<td>3. Compare study results with criteria and use to devise and evaluate potential risk reduction measures</td>
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<tr>
<td>• Escape, Evacuation and Rescue Analysis (EERA)</td>
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<tr>
<td>• TR Impairment Assessment (TRIA)</td>
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<td>• Occupied Building Risk Assessment (OBRA)</td>
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<td>• Dropped object analysis</td>
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<td>• Emergency Systems Survivability Analysis (ESSA)</td>
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<td>• Ship collision analysis</td>
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<td>• Transportation risk study</td>
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After completing the course you should be able to:

1. Critically review the use of specialist risk studies in the oil, gas and process industries
2. Apply specialist risk studies to simple oil, gas and process industry operations to analyse the risks to personnel
3. Compare study results with criteria and use to devise and evaluate potential risk reduction measures

Delivery methods

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<th>Delivery methods</th>
<th>Hours</th>
<th>Face-to-face</th>
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<tr>
<td>Risktec CPD</td>
<td>20</td>
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<td>Attendance only</td>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?

Education, skills or experience equivalent to undergraduate level. Risktec courses: Principles of Risk Management, Oil and Gas and Process Industry QRA.
What’s the purpose?
The course provides an overview of oil and gas industry facilities and activities and the typical hazards associated with this industry. It also provides an understanding of the role of risk management through the oil and gas project lifecycle. This includes evaluating regulatory regimes and the opportunities for risk reduction during the phases of a project.

Who is this for?
Managers, engineers and HSE professionals who need to lead or undertake risk management processes for their organisation and facilities, and individuals new to the oil and gas industry who require an overview of the industry’s risks.

What does it cover?
- Hydrocarbon industries sources of risk
- Regulatory regimes
- Value and risk management through the project lifecycle
- Overview of risk assessment tools and techniques

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.

After completing the course you should be able to:
1. Critically review, from an HSE perspective, the engineering options for developing an oil and/or gas reservoir and delivering the products to market
2. Analyse the oil & gas industry project life cycle with regards to the change in the hazard and risk profile
3. Critically compare and contrast the different approaches to governance and regulation of the oil and gas industry around the world and analyse the influence of major incidents on regulatory regimes

Delivery method: face-to-face
Attendance only

2 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
What’s the purpose?
The purpose of the course is to introduce and appraise the requirements for performance monitoring, auditing and management review, including relevant standards and guidance. It also considers the potential safety benefits and challenges in their use.

Who is this for?
Managers, HSE advisors and risk management practitioners.

What does it cover?
- Introduction to the requirements for performance monitoring, auditing & management review
- Relevant standards and guidance
- Establishing performance monitoring processes
- Objectives and Key Performance Indicators (KPIs) for the management system
- Management system auditing processes and techniques
- Establishing a management review process
- Implementation aspects and lessons learned

After completing the course you should be able to:
1. Devise objectives and key performance indicators (KPIs) and a performance monitoring process
2. Generate an auditing process or audit plan and apply auditing techniques
3. Devise a management review process

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<th>Attendance only</th>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: HSE Management Systems.
What’s the purpose?
To enable an understanding of the range of hazardous physical effects that can occur, an overview of human and equipment vulnerability to physical effects, and the uses and limitations of physical effects modelling. This includes an introduction to physical effects modelling and the opportunity for some hands-on practice of physical effects calculations.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- What are physical effects and why model them?
- Source term release and discharge calculation
- Dispersion analysis
- Fire modelling
- Explosion modelling
- Subsea releases/dispersion
- Human and plant vulnerability to physical effects
- Commercial and public domain software tools

After completing the course you should be able to:
1. Analyse an industrial plant/installation to determine expected physical effects in the event of an incident
2. Evaluate, by applying physical effects modelling techniques, how these physical effects affect people and plant
3. Justify which of the available modelling techniques/software is appropriate to analyse physical effects in different circumstances, whilst understanding the limitations of these techniques

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<tr>
<td>Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.</td>
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Delivery methods

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<th>Hours</th>
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<tr>
<td>Risktec CPD</td>
<td>20</td>
<td>2 days, followed by assessment</td>
<td>12 weeks’ duration</td>
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<td>Attendance only</td>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.
Principles of Regulatory Systems

What's the purpose?
To provide participants with a high-level appraisal of the underlying principles which determine the organisation, scope, objectives, reporting and communication of regulatory bodies.

Who is this for?
Managers, engineers, operators, safety advisors and risk management practitioners.

What does it cover?
- Legislative and regulatory requirements and standards:
  - Principles of regulatory assessment
  - Responsibilities and objectives of assessment process
  - Scope of review and assessment
  - Review and assessment process
  - Documentation and communication
  - Promotion of safety
- Principles of a regulatory body:
  - Organisation and function
  - Independence
  - Authority
  - Professionalism
- Principles of inspection:
  - Objectives and principles of inspection and enforcement
  - Key issues over the nuclear lifecycle

After completing the course you should be able to:
1. Analyse regulatory requirements arising from legislation and standards
2. Critically review the key organisational factors, competency requirements and performance monitoring underpinning effective regulatory bodies
3. Apply the key principles of safety assessment and review over a nuclear facility lifecycle
4. Assess the requirements and scope of inspection and enforcement
5. Describe principles governing the role of the regulator in the establishment and development of effective safety processes and culture
6. Examine the importance of communication as part of an effective regulatory function

Delivery method: Face-to-face
Attendance only
2 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Principles of Risk Management

What’s the purpose?
The course provides an overview of risk management in the high hazard industries. It discusses the drivers for risk management, defines some of the fundamental terminology and introduces major risk management concepts, such as risk tolerability criteria and As Low As Reasonably Practicable (ALARP). The course briefly introduces some key risk assessment techniques and the situations in which they may be used. It considers the purpose and structure of an HSE/safety case and an HSE Management System (HSE MS). The course includes case studies of some significant historical accidents and their root causes, and evaluates the importance of safety leadership and organisational culture in preventing accidents.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Drivers for risk management
- Definitions and terminology
- Elements of the risk management process
- Demonstration of ALARP
- Example tools, techniques and studies
- The HSE case (or safety case) and HSE management system
- Leadership, culture and behaviours
- Causes of major accidents

After completing the course you should be able to:
1. Deconstruct the risk management process into its constituent components
2. Contrast key risk management terms such as “hazard”, “consequence” and “risk”
3. Evaluate the various drivers which cause organisations to manage risk
4. Demonstrate expertise in academic referencing (postgraduate programme only)

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<th>Delivery methods</th>
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<th>Face-to-face</th>
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<tr>
<td>Postgraduate</td>
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<td>Risktec CPD</td>
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<td>12 weeks’ duration</td>
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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
**What's the purpose?**

Controlling risks within high hazard industries requires a robust process safety management (PSM) system and the experienced application of process hazard and risk analysis (PH&RA) techniques. This PH&RA course is part of the TÜV Rheinland Functional Safety Programme. The course demonstrates how to apply theory in practice, using simple and more complex examples to illustrate key points. Participants who successfully pass the examination will be awarded a FS Engineer (TÜV Rheinland) Certificate.

**Who is this for?**

Process engineers, safety engineers and managers, instrument engineers and operations personnel, plant and operations managers, and persons with HAZOP study experience and a basic knowledge of loss prevention.

**What does it cover?**

- Process Safety Management, Risk identification
- What if?, HAZID, HAZOP, FMEA
- Risk analysis, Risk matrix, Bowtie analysis
- Fault Tree & Event Tree analysis
- Physical Effects Modelling (PEM)
- LOPA, SIL assessment
- Risk evaluation, risk criteria, ALARP assessment
- Risk treatment
- Communication, consultation, monitoring & review
- Selecting the right technique
- Planning PH&RA studies
- Facilitating workshop-based studies
- Reporting PH&RA studies

**After completing the course you should be able to:**

1. Apply the most popular and internationally adopted methods and tools for identifying and managing the risks associated with process related hazards
2. Actively participate in and give effective support during the whole process hazard and risk analysis approach
3. Identify hazards and analyse risk, including applying the IEC 61882 HAZOP standard
4. Relate the requirements of Functional Safety according to IEC 61508 / IEC 61511 to process hazards and risk analysis

**Delivery methods**

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<td><strong>Attendance</strong></td>
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<td>5 days, including exam</td>
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*If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.*

**What prior study is recommended?**

PH&RA practitioner experience.

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risktec.tuv.com
training@risktec.tuv.com
+44 (0)1925 611200
Process Hazard Analysis

What’s the purpose?
Comprehensive hazard identification is the cornerstone of effective risk management. This course covers practical methods for performing process hazard analyses (PHAs) of systems and procedures, using the hazard and operability (HAZOP) and what-if and checklist techniques. It teaches participants the methods used to identify hazard potential and their consequences when plant or equipment operates outside its design intent.

Who is this for?
Project Managers, Operation Managers, Process Engineers, Operators, HSE advisors and risk management practitioners.

What does it cover?
- Process safety management & risk assessment
- Using the risk ranking matrix
- What-if and checklist technique, HAZOP technique
- Differences between HAZOP, what-if and checklist
- Analysis preparation, meetings, documentation & follow-up
- Understand how the LOPA technique can assist in the determination of the suitability of safeguards
- Common failings in PHAs, Human factors concepts
- PHA for analysing procedures and batch processes
- Roles & responsibilities of team and team members
- PHA revalidation

After completing the course you should be able to:
1. Select the most appropriate technique for the PHA
2. Apply PHA techniques to identify hazards, clearly define the consequences and challenge the suitability of the safeguards
3. Report and document the findings from the PHA

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What’s the purpose?
Controlling risks within major hazard enterprises requires a robust process safety management (PSM) system. This course introduces the essential elements of a PSM system and provides an overview of key focus areas including process safety leadership, process safety studies, strategies for reducing and managing risk, and monitoring and auditing performance.

Who is this for?
Project managers, project engineers, project advisors, operations and maintenance managers, and process safety practitioners, especially those working in large, complex, high-value project and operational environments.

What does it cover?
- Definition of Process Safety Management (PSM)
- Twenty elements of a PSM system
- Process safety standards and guidance
- Inherently safer design
- Process safety studies
- Process safety reviews
- Barrier diagrams (bowtie analysis)
- Safety critical elements, performance standards, assurance and verification
- Process safety leading and lagging indicators
- Process safety audits
- Management of change
- Implementation aspects

After completing the course you should be able to:
1. Analyse the process safety management system
2. Analyse the importance of assuring the integrity of engineered barriers (plant), competency of key personnel (people) and quality of procedures (processes)
3. Devise approaches for the successful implementation of the process safety management system

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If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What’s the purpose?
The purpose of this course is to provide an overview of the project risk management process and the tools and techniques available for the systematic identification, assessment and mitigation of project risks.

Who is this for?
Project managers, project engineers, project advisors and risk management practitioners, especially those working in large, complex, high-value project environments.

What does it cover?
- What is a Project? Drivers of project risk management; time, cost, quality and safety
- Examples of major project failures and successes
- The project lifecycle
- The project risk management process
- The Project Risk Register
- The Project Business Case; relationship to Risk Register; lifecycle; reviews
- Project Organisational Structure
- The Project Plan; relationship to Risk Register
- Stakeholders and how they introduce risk (e.g. HSE risk); Project Communication Plan
- Project Controls: gate reviews, configuration control, change management, risk management tools (e.g. bowties)

After completing the course you should be able to:
1. Analyse the various drivers for managing project risks
2. Understand the components of the project risk management process
3. Compare and contrast the key tools and techniques available to identify and assess project risks
4. Understand how effective project risk management cost-effectively implements measures that reduces residual risk to an acceptable level

Attendance only

Delivery method: face-to-face

2 days

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Radioactive Waste Management and Decommissioning

What’s the purpose?
To provide participants with a high-level appraisal of the underlying principles of radioactive waste management and decommissioning.

Who is this for?
Managers, engineers, operators, safety advisors and risk management practitioners.

What does it cover?
- Nuclear waste management:
  - System of Clearance, discharge, disposal, recycling and re-use
  - Regulated management and disposal of radioactive waste
- Nuclear fuel disposal:
  - Disposal options
  - Design and operational safety of facilities
  - Long-term safety assessment
  - Regulatory involvement
- Reactor decommissioning
  - Reactor shutdown
  - Closure of decommissioning project
  - Reactor dismantling strategy and planning
  - Safety and radiation protection standards and criteria
  - Safety management strategy
  - Key regulatory issues

After completing the course you should be able to:
1. Critically review management of wastes from nuclear power plants
2. Consider disposal of spent nuclear fuel
3. Evaluate design considerations for reactor decommissioning

Delivery method: face-to-face
Attendance only
1 day

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
Radiological Protection

What’s the purpose?
To provide participants with a high-level appraisal of the underlying principles of radiation hazards, risks and control methods.

Who is this for?
Managers, engineers, operators, safety advisors and risk management practitioners.

What does it cover?
- Measures of radiation for personnel protection:
  - Biological radiation effects
  - Short term/long term
  - Deterministic/stochastic
- Standards of protection:
  - Limitation, justification and optimisation,
  - Internal/external exposure
- Means of protection:
  - Categorisation of workers and working areas
  - Engineered and operational control
  - Shielding
  - Contamination control
- Issues on nuclear plant:
  - Sources of radiation in reactors
  - Contamination monitoring and control
  - Personnel monitoring and operational control

After completing the course you should be able to:
1. Explain the principles of radiation protection
2. Apply exposure limits and means of protection
3. Critically review radiation protection in nuclear plants

Delivery method: face-to-face
Attendance only
1 day

If you are a corporate client and would like a customised delivery, please contact the training team to discuss your requirements.

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
What’s the purpose?
The course provides an overview of the typical hazards associated with railway infrastructure, rolling stock, operations and maintenance. It also provides an introduction to the concepts of risk management and an understanding of the role of risk management through the rail project lifecycle. This involves studying the different sources of risk in the rail industry, the regulatory regimes of the industry, the typical phases of a project and opportunities for risk reduction within each of the phases and the final acceptance into service.

Who is this for?
Managers, engineers and HSE professionals who need to lead or undertake risk management processes for their organisation and facilities, and individuals new to the rail industry who require an overview of the industry’s risks.

What does it cover?
- Risk Management introduction or refresher
- Rail industry sources of risk
- Collisions between trains
- Standard Mitigations
- Regulatory regimes/requirements
- Overview of Risk Assessment Tools and Techniques used in the industry

After completing the course you should be able to:
1. Deconstruct the risk management process into its constituent components and contrast key risk management terms such as "hazard", "consequence" and "risk"
2. Evaluate the various drivers which cause railway organisations to manage risk
3. Understand the principle sources of hazards and evaluate the risks which typically arise during rail industry projects
4. Apply knowledge of these hazards and the available mitigations to the management of risk within rail projects

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.
Rail Safety Analysis

What’s the purpose?
The course enables students to understand and implement the requirements of formal safety assessment in the rail industry. This involves an introduction to safety and risk with an overview of safety regulations in rail engineering. Potential escalation events, human factors and safety management are discussed. Organisational responsibilities, risk criteria, risk modelling, risk reduction and decision-making techniques also form part of the course.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Introduction to safety and risk in the rail industry
- Identifying and assessing railway hazards and risks
- Potential escalation events e.g. speed, derailment
- Human factors and safety management
- Organisational responsibilities
- Risk reduction and criteria
- Novel risk modelling and decision-making techniques

After completing the course you should be able to:
1. Demonstrate knowledge of the principles of risk management and its relevance to the rail industry
2. Apply techniques to evaluate risk of the rail environment from both design and operation aspects
3. Generate a quantitative and/or qualitative rail formal safety assessment

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Rail Industry Hazards and Risks.
Reliability, Availability and Maintainability (RAM) Analysis

What’s the purpose?
To enable students to apply appropriate RAM methodologies to projects, ensuring that RAM is included within the design and that RAM targets are met. The course also discusses the concept of critical and life-limited items and the use of reliability centred maintenance strategies to reduce maintenance costs. Finally the course considers the trade-offs between RAM and safety requirements, as well as discussing how RAM shortfalls may be addressed.

Who is this for?
Managers, discipline engineers and HSE and reliability professionals seeking to improve asset performance.

What does it cover?
- Introduction to Reliability Availability and Maintainability (RAM)
- Availability and safety; potential conflicts
- RAM planning and choice of methodology
- RAM assessment methods; deterministic
- Numerical RAM assessment techniques
- Critical and life-limited items
- Maintainability and maintainability demonstrations
- Reliability Centred Maintenance (RCM)
- Methods of improving reliability

After completing the course you should be able to:
1. Identify and apply the analysis methodologies to systems and sub-systems, including both design and operation restrictions, to determine the Availability, Reliability and Maintainability of these Systems
2. Critically review and balance the requirements of the design for RAM and safety
3. Logically deduce how RAM results for a system may be improved

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risktec.tuv.com
training@risktec.tuv.com
+44 (0)1925 611200
Risk Analysis

What’s the purpose?
To provide a solid foundation of knowledge of risk assessment tools, with an emphasis on the concept of risk and qualitative risk assessment techniques.

Who is this for?
Managers, engineers, operators, HSE advisors and risk management practitioners.

What does it cover?
- Identifying and recording hazards
- The risk assessment matrix
- Risk analysis and risk reduction through project or facility lifecycle
- Significance of environmental aspects; environmental risk assessment
- Human factors in design
- Health risk assessment (HRA)
- Security risk assessment
- Business and/or commercial risk assessment
- Quantitative risk assessment (QRA) techniques
- Safety Integrity Level (SIL) assessment
- Layers of Protection Analysis (LOPA)
- External hazards, good practice in risk analysis

After completing the course you should be able to:
1. Logically deduce the most appropriate risk assessment tool or technique to be used, depending on circumstances
2. Apply certain risk assessment techniques
3. Critically review example risk assessments and techniques

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What’s the purpose?
ALARP (As Low As Reasonably Practicable) is a commonly used but often misunderstood concept. The purpose of this course is to enable students to understand the hierarchy of risk reduction measures and the options for risk reduction in the project lifecycle. Students will be introduced to the concept of ALARP, practise applying it and learn how to demonstrate that risk has been reduced to ALARP levels.

Who is this for?
Project and operational managers, engineers and HSE professionals.

What does it cover?
- Risk management summary
- Hierarchy of risk reduction measures
- Risk reduction through the project lifecycle
- The ALARP concept
- Demonstrating ALARP
- Qualitative and semi-quantitative approaches
- Cost Benefit Analysis (CBA)
- Societal risk

After completing the course you should be able to:
1. Identify different options available for risk reduction
2. Decide when risk reduction measures can best be used
3. Describe the concepts of “tolerability of risk” and “As Low As Reasonably Practicable (ALARP)”
4. Apply the ALARP concept and conduct an ALARP assessment to an appropriate level of detail

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management
Root Cause Analysis

What's the purpose?
The aim of the course is to introduce the investigation approach for safety, process or system based events, and provide details on various analysis techniques available to identify the root causes, whether equipment, human or organisational.

Who is this for?
Managers, supervisors and professionals who may be called upon to participate in the investigation and analysis of safety, process or system-based events.

What does it cover?
- Six steps for a successful investigation
- Root cause analysis techniques:
  - Cause and effect diagram & change analysis
  - Event and casual factor chart
  - Failure modes and effects analysis (FMEA)
  - Fault tree analysis
  - Five Whys method
  - Hazard-barrier-target analysis (Tripod)
  - Job task analysis
  - Management oversight and risk tree analysis (MORT)
  - Human errors, violations, safety culture & organisational effectiveness

After completing the course you should be able to:
1. Plan an investigation and analysis
2. Choose and apply the most appropriate root cause analysis technique for the adverse event
3. Determine direct, contributing and root causes, and support conclusions logically with facts
4. Determine organisational effectiveness and safety culture weaknesses that promoted or created vulnerability to the adverse event
5. Explain key investigation results and support them in an oral briefing

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.

Delivery method: face-to-face
Attendance only
2 days

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Safety/HSE Cases

What’s the purpose?
The aim of this course is to explain the purpose, content and uses of a Safety/HSE Case. Particular attention is focused on the best practical approaches to address legal, industry and company requirements. The differing types of Safety/HSE Case during the project lifecycle are discussed, as well as differences in approaches between industries. Links between the case, supporting studies and the management system are studied. Best practices for implementing and maintaining the case are also reviewed.

Who is this for?
Managers, supervisors, HSE practitioners and risk management practitioners.

What does it cover?
- Historical drivers
- Legal requirements: UK, Europe, worldwide
- Company and industry body requirements
- Differing types of case by project phase (e.g. PSR, PCSR, design, operational, decommissioning)
- Safety Case structure and approach by industry
- Bridging documents
- Links between the case and supporting studies and the case and the management system
- Documentation, management and maintenance of the Safety Case
- Roll-out and implementation
- Features of a fit-for-purpose Safety Case

After completing the course you should be able to:
1. Critically review the reasons for having Safety Cases and the role of the Safety Case
2. Justify the contents of a Safety Case
3. Discuss the key factors to be considered when planning a Safety Case

What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.

Delivery methods

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What’s the purpose?
The purpose of the course is to equip personnel who may be required to respond to a ‘reportable’ crime aboard ship, to do so in accordance with the CVSSA 2010. Personnel who receive training through this course will ensure a vessel’s compliance with USCG directive, under the Act.

Who is this for?
Those personnel on board ship who may be required to manage the immediate response to a reportable crime.

What does it cover?
- The Cruise Vessel Security and Safety Act 2010
- Security threats to cruise ships
- Maritime security legislation
- Crime prevention, threats, risks and vulnerabilities
- The principles of security
- Security and surveillance equipment
- Circumventing security measures
- Mandatory reporting
- The recognition of crime
- Evidence: early evidence kits, crime scene photography, processing evidence, witnesses
- Missing persons, sudden deaths and fatal accidents
- Rape, sexual and serious physical assaults
- Post-incident review and experiential learning cycle
- Confidentiality and data protection
- Legal aspects: common offences, use of force and custody

After completing the course you should be able to:
1. Contribute to the enhancement of safety and security through heightened awareness
2. Recognise security and safety risks, threats and vulnerabilities in order to prevent crime
3. Identify and preserve evidence
4. Report and record criminal offences

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level.
**What’s the purpose?**

This course provides participants with skills and experience to conduct hazard assessments using the “What-if?” methodology, one of the most commonly-used hazard identification and assessment methods. Students will be introduced to the concept of “What-if?” analysis, which requires a team to brainstorm all likely causes of hazards and evaluate them sufficiently so as to prevent catastrophic incidents from occurring.

**Who is this for?**

Line and functional senior and middle managers working in high hazard industries.

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**What does it cover?**

- Overview and differences between HAZOPs, What-if? and checklists
- How to choose the appropriate methodology
- Definitions (causes, consequences, safeguards, risk, recommendations)
- Golden rules of PHAs
- Roles and responsibilities of team members
- Use of the risk ranking matrix
- What comprises a good recommendation
- Checklists - when to use them, what’s available
- PHA follow-up (managing recommendations and declining recommendations)

**After completing the module you should be able to:**

1. Analyse the asset integrity risk management process throughout the asset lifecycle
2. Analyse the importance of assuring the integrity of engineered barriers (plant), competency of key personnel (people) and quality of procedures (processes) to prevent major incidents
3. Justify the approaches that are used to effectively reduce risks as low as reasonably practicable (ALARP)

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**Attendance only**

**Delivery method: face-to-face**

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**What prior study is recommended?**

Managerial experience.
Workplace Safety

What’s the purpose?
The aim of this course is to provide an appreciation of workplace hazards, the systems for controlling them and the drivers for the need for continuous improvement in workplace safety. Task risk assessment, Permit to Work, behavioural safety systems and hazardous area classification are studied, as are personal protective equipment and management of hazardous chemicals and goods.

Who is this for?
Managers, supervisors and HSE professionals who have a responsibility for workplace safety.

What does it cover?
- Drivers for continuous improvement in workplace safety
- Workplace hazards
- Task risk assessment / job safety analysis
- Permit to work systems
- Behavioural safety systems, e.g. STOP
- Hazardous chemicals and goods
- Personal protective equipment
- Hazardous area classification

After completing the course you should be able to:
1. Apply appropriate techniques to develop a documented workplace safety assessment
2. Consider alternative approaches to workplace safety management
3. Apply the concept of tolerability of risk and As Low As Reasonably Practicable (ALARP) to workplace hazard management

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What prior study is recommended?
Education, skills or experience equivalent to undergraduate level. Risktec course: Principles of Risk Management.