10-Day Advanced Construction Safety and HSE Management Training Course

9 – 20 August 2027
Porto

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Ref: 103600623_108032 **Date:** 9 – 20 August 2027 **Location:** Porto **Fees:** 10000 Euro

Overview

Major infrastructure, refinery, and energy developments demand rigorous oversight to eliminate workplace fatalities and operational disruptions. This 10-day advanced construction safety and HSE management training course equips project directors, HSE managers, and site inspection teams with systematic governance frameworks for high-risk industrial environments. Participants analyze real-world project hazards spanning greenfield developments, brownfield upgrades, and complex multi-employer sites. The curriculum addresses high-risk engineering controls, contractor oversight models, commissioning interfaces, and incident prevention protocols. This course is delivered by Agile Leaders Training Center.

Who Should Attend

- HSE managers, safety department heads, and project safety directors overseeing complex capital works.
- Construction project managers, EPC contract directors, and site execution superintendents.
- Occupational safety inspectors, compliance auditors, and field safety engineers.
- Emergency response managers, industrial fire chiefs, and crisis planning specialists.
- Contractor safety representatives, commissioning managers, and SIMOPS coordinators.

Targeted Departments and Industries

This syllabus serves capital project professionals and technical specialists across major industrial sectors.

- EPC Project Delivery, Civil Engineering, and Infrastructure Construction
- Refining, Petrochemicals, and Hydrocarbon Processing Plants
- Oil and Gas Extraction, Marine Terminals, and Pipeline Networks
- Power Generation, Renewable Energy, and Utility Installations
- Heavy Manufacturing, Mining Developments, and Regulatory Inspection Bodies

Learning Objectives

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

- Establish construction safety governance frameworks that clearly define EPC and subcontractor accountabilities.
- Execute construction hazard identification and risk assessment procedures using HIRA tools and structured risk matrices.
- Enforce advanced permit to work arrangements covering hot work, confined space entry, excavation, and energy isolation.
- Supervise high-risk construction activities including structural scaffolding, heavy mobile plant, and critical crane lifts.
- Implement robust contractor safety management systems from prequalification through site execution and performance audits.
- Coordinate SIMOPS safety management protocols across operating facilities and simultaneous construction activities.
- Design emergency response and site evacuation strategies addressing fires, chemical releases, and structural failures.
- Manage pre-commissioning safety verifications to guarantee safe facility handover to operations.

Course Agenda

Day 1: Construction Safety Governance and Leadership

- Strategic safety governance models for complex engineering and construction projects
- Defining statutory duties and contractual interfaces between clients, EPC firms, and subcontractors
- Safety leadership behaviours and methods for building positive reporting cultures
- Establishing project-specific safety policies, objectives, and leadership charters
- Leading and lagging performance indicator scorecards for project monitoring

Day 2: Construction HSE Planning and Mobilization

- Developing project HSE execution plans for greenfield and brownfield environments
- Site logistics planning, access control, and traffic segregation strategies
- Pre-construction site surveys, environmental assessments, and readiness milestones
- Subcontractor mobilization verifications and site accommodation safety standards
- Management of change procedures for organizational and design modifications

Day 3: Construction Hazard Identification and Risk Assessment

- Methodologies for construction hazard identification and risk assessment across project lifecycles
- HIRA register architecture, hazard ranking, and qualitative risk matrix applications
- Job safety analysis preparation and daily pre-task briefing techniques
- Evaluating control hierarchies from engineering elimination to personal protection
- Dynamic risk assessments for shifting site environments and weather extremes

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Day 4: Permit to Work Systems and Energy Isolation

- Establishing advanced permit to work arrangements across multi-contractor sites
- Roles and competencies for permit issuing authorities, performers, and field coordinators
- Hot work authorization protocols and fire watch supervision standards
- Confined space entry control, atmosphere testing, and attendant obligations
- Lockout tagout procedures, mechanical blanking, and electrical energy isolation verification

Day 5: Working at Height, Scaffolding, and Fall Prevention

- Fall hazard management plans and hierarchy of fall protection measures
- Scaffold design criteria, load ratings, and structural stability verifications
- Scaffolding inspection regimes, handover certificates, and scaffold tagging protocols
- Safe usage standards for mobile elevating work platforms and temporary access towers
- Emergency rescue planning and suspension trauma prevention for fall arrest casualties

Day 6: Excavation, Underground Utilities, and Demolition

- Excavation safety planning, soil classification, and geotechnical hazard controls
- Underground service detection techniques, clearance permits, and utility mapping
- Engineering controls for trench shoring, shielding, benching, and battering
- Temporary works management procedures, stability registers, and design coordination
- Demolition methodology planning, structural weakening controls, and debris containment

Day 7: Lifting Operations and Heavy Equipment Management

- Crane siting, ground-bearing capacity calculations, and outrigger matting verification
- Rigging hardware inspection, load sling angle calculations, and discard criteria
- Critical lift categorization, engineering lift plans, and multi-crane tandem lifts
- Heavy plant safety management, operator competence verification, and exclusion zones
- Dropped object prevention schemes and perimeter barricade enforcement

Day 8: Contractor Safety Management and Site Auditing

- Contractor safety management frameworks, prequalification evaluations, and scoring
- Contractor safety orientations, worker competency verification, and badge systems
- Safety audit methodologies, risk-targeted site inspections, and walkabout routines
- Non-conformance management, root cause identification, and corrective action registers
- Managing subcontractor disciplinary measures and contractual reward mechanisms

Day 9: Oil, Gas, Refinery, and SIMOPS Safety

- Process safety fundamentals and toxic release controls for brownfield construction
- Hydrocarbon facility interface controls, cold work boundaries, and ignition elimination
- SIMOPS safety management matrices, barrier assessments, and risk mitigation
- Coordination meetings, combined permit reviews, and joint authority protocols
- Emergency shutdown system protection and fire and gas detection preservation

Day 10: Emergency Response, Commissioning, and Project Handover

- Emergency response plan formulation, command structures, and muster drill management
- Crisis communication, casualty triage protocols, and mutual aid agreements
- Pre-commissioning hazard reviews, energization notices, and punch list verifications
- Process line pigging, pressure testing, and chemical flushing safety controls
- Safe construction-to-operations handover documentation and final HSE record closeout

Practical Exercises

Participants apply practical HSE management techniques through structured workshop scenarios.

- Formulate a project-specific HSE execution plan for a live brownfield refinery revamp.
- Conduct a detailed HIRA exercise for simultaneous crane lifting and excavation operations.
- Review and authorize complex permit to work arrangements involving confined space entry and hot work.
- Draft a SIMOPS risk matrix and boundary protocol for a hydrocarbon processing facility tie-in.
- Construct a site emergency escalation workflow and tabletop crisis simulation exercise.

Course Toolbox

The course introduces practical frameworks, checklists, and planning templates that safety managers can implement on active projects:

- Project HSE Execution Plan model framework
- HIRA and Job Safety Analysis documentation templates
- Advanced Permit to Work authorization matrices and checklists
- Critical lift planning and crane setup validation guides
- Contractor safety prequalification assessment rubrics
- SIMOPS interface control and barrier management registers
- Pre-commissioning safety review and facility handover forms

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Frequently Asked Questions

What specific qualifications or prerequisites are needed for participants before enrolling in the course?

Participants should have practical experience in HSE management, site engineering, construction supervision, or occupational safety inspection. While formal certifications are not mandatory, familiarity with basic risk assessment concepts and site operations enables effective engagement with advanced governance topics.

How long is each day's session, and is there a total number of hours required for the entire course?

Daily sessions run for four to five hours, balancing structured lectures with practical scenario analysis. Over the course of the ten-day programme, participants complete forty to fifty hours of focused professional development.

What is the difference between construction safety management and process safety during an oil and gas construction project?

Construction safety focuses on physical occupational risks such as falls, excavations, lifting, and equipment operation. Process safety concentrates on containing hazardous substances and maintaining the integrity of pressurized systems. In hydrocarbon facilities, both disciplines converge during SIMOPS and commissioning to prevent major loss-of-containment incidents.

How This Course is Different

Unlike basic construction safety programmes that focus merely on PPE rules and basic site conduct, this curriculum emphasizes project-wide governance and operational systems. Participants learn how to integrate safety controls across complex supply chains, resolve live process plant interfaces, and navigate the transition from structural assembly to live commissioning. The training equips safety directors to make defensible decisions, establish robust contractor accountability, and maintain rigorous site oversight across every project phase.