Advanced Construction Safety and HSE Management Training Course

23 – 27 November 2026
Addis Ababa

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Ref: 103600622_225420 **Date:** 23 – 27 November 2026 **Location:** Addis Ababa **Fees:** 4500 Euro

Course Overview:

The Advanced Construction Safety and HSE Management Training Course is designed for experienced HSE professionals, construction leaders, safety inspectors, project managers, and contractor representatives responsible for high-risk construction, refinery, petrochemical, and oil and gas projects. This advanced construction safety training moves beyond basic site precautions to address construction safety governance, contractor control, occupational safety inspection, project risk management, emergency preparedness, and the transition from construction to commissioning and operations.

Participants explore HSE management for new construction projects across greenfield, brownfield, EPC, refinery, and process-plant environments. The course combines construction hazard identification and risk assessment, HIRA for construction projects, construction JSA training, advanced permit-to-work controls, SIMOPS safety management, and construction and operations interface safety. Particular attention is given to work at height, scaffolding, lifting operations, excavation, confined spaces, electrical isolation, hot work, heavy equipment, and temporary works.

The course follows a proactive “find and fix” approach, emphasizing management leadership, worker participation, hazard prevention, programme evaluation, and coordination across multi-employer construction sites. It also reflects structured project safety planning, contractor responsibilities, emergency arrangements, and preventive controls throughout construction execution.

By connecting advanced construction HSE training with oil and gas process hazards, refinery systems, emergency shutdown functions, fire and gas systems, and commissioning interfaces, the course prepares participants to lead complex projects safely from mobilization through handover.

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Target Audience:

- Heads of Occupational Safety Inspection
- HSE Managers and HSE Department Heads
- Construction Safety Managers
- Project HSE Managers
- Emergency Response Managers and Experts
- Construction Project Managers
- EPC Project Managers
- Refinery and Petrochemical HSE Leaders
- Oil and Gas Operations Leaders
- Construction Safety Inspectors
- HSE Engineers and Senior Safety Engineers
- Contractor and Subcontractor HSE Managers
- Commissioning and Pre-Commissioning Managers
- Permit-to-Work Authorities and Coordinators
- SIMOPS Coordinators
- Site Construction Managers
- Lifting and Rigging Supervisors
- Fire, Rescue, and Emergency Preparedness Professionals

Targeted Organizational Departments:

- Occupational Safety and Health
- HSE Management
- Construction and Project Execution
- Project Management Office
- Engineering, Procurement, and Construction
- Contractor and Subcontractor Management
- Emergency Response and Crisis Management
- Operations and Maintenance
- Refinery and Process Operations
- Pre-Commissioning and Commissioning
- Quality Assurance and Compliance
- Risk Management
- Technical Inspection
- Asset Integrity and Reliability
- Fire Protection and Industrial Security

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Targeted Industries:

- Construction and Civil Engineering
- Oil and Gas
- Refining and Petrochemicals
- EPC Contracting
- Process Plant Construction
- Power Generation and Utilities
- Industrial Manufacturing
- Infrastructure and Transportation
- Ports and Marine Terminals
- Mining and Heavy Industry
- Renewable Energy Construction
- Government Inspection and Regulatory Bodies

Course Offerings:

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

- Establish an advanced construction HSE management system for new construction projects.
- Develop construction HSE planning for greenfield projects and brownfield construction activities.
- Apply construction hazard identification and risk assessment using HIRA, JSA, and risk matrices.
- Strengthen HSE leadership in construction through governance, accountability, and performance oversight.
- Manage contractor and subcontractor safety across major construction and EPC projects.
- Conduct advanced construction safety inspection and audit activities using risk-based priorities.
- Control high-risk work involving heights, scaffolding, lifting, excavation, confined spaces, and demolition.
- Implement advanced permit-to-work arrangements for hot work, confined space entry, excavation, isolation, and critical lifting.
- Apply construction lockout tagout and LOTO for construction projects involving mechanical and electrical energy.
- Manage oil and gas construction safety risks within refinery and petrochemical environments.
- Coordinate SIMOPS safety management for construction and operations interfaces.
- Develop construction emergency response plans, escalation protocols, and contingency arrangements.
- Prepare for pre-commissioning and commissioning safety through readiness reviews and controlled handover.
- Monitor leading and lagging HSE indicators and improve construction safety performance.
- Integrate worker participation, contractor communication, and multi-employer coordination into construction safety governance.

Training Methodology:

The training methodology combines expert-led instruction with practical analysis of major construction, refinery, petrochemical, and oil and gas project scenarios. Each subject is introduced through clear technical explanations and then connected to actual project decisions, inspection findings, contractor responsibilities, and work-control arrangements.

Participants examine construction HSE plans, risk registers, HIRA records, job safety analyses, permit-to-work arrangements, inspection findings, lift plans, emergency procedures, and commissioning-readiness examples. Group activities focus on evaluating high-risk work, identifying control gaps, assigning accountability, and determining whether residual risks are acceptable. The course also uses case studies involving work at height, lifting operations, excavation collapse, confined space entry, hot work, electrical isolation, heavy equipment movement, and contractor coordination.

Interactive sessions include risk-ranking exercises, inspection simulations, contractor performance reviews, emergency-response discussions, and SIMOPS coordination scenarios. These methods reflect the value of proactive hazard identification, worker involvement, continuous improvement, and communication between employers on multi-employer worksites. Emergency-response activities are informed by risk analysis, minimum preparedness actions, advanced preparedness, contingency planning, and clearly assigned management accountability.

Facilitated feedback sessions allow participants to compare established controls with project conditions and identify practical improvements. The training remains focused on advanced HSE leadership and workplace application rather than basic construction safety awareness.

Course Toolbox:

The course introduces insights, examples, and practical applications related to the following tools. These tools are not physically or commercially provided as part of the course:

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- Construction HSE Plan structure
- Project-specific construction safety plan example
- Construction hazard identification register
- HIRA risk-ranking example
- Construction JSA and pre-task planning example
- Construction risk matrix
- Advanced permit-to-work control framework
- Contractor HSE prequalification criteria
- Contractor safety performance scorecard
- Construction safety inspection checklist example
- Risk-based audit planning example
- Critical lifting plan review guide
- Scaffolding inspection reference
- Excavation and trenching control checklist
- Confined space entry control guide
- LOTO and energy-isolation verification example
- Hot work authorization and fire-watch guide
- Construction traffic management plan example
- Dropped-object prevention checklist
- SIMOPS interface risk register example
- Emergency response and escalation plan structure
- Emergency drill evaluation example
- Pre-commissioning safety review guide
- Construction-to-operations handover checklist
- Leading and lagging HSE indicator dashboard example
- Corrective-action tracking register

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Course Agenda:

Day 1: Construction HSE Governance, Leadership, and Project Planning

- **Topic 1:** Advanced Construction Safety Management Principles
- **Topic 2:** HSE Leadership in Construction and Management Accountability
- **Topic 3:** Construction Safety Governance and Performance Management
- **Topic 4:** HSE Management for New Construction Projects
- **Topic 5:** Construction HSE Planning for Greenfield and Brownfield Projects
- **Topic 6:** EPC Project HSE Roles, Responsibilities, and Assurance
- **Reflection & Review:** Review project-governance gaps, leadership responsibilities, and priority actions for strengthening construction HSE planning.

Day 2: Advanced Construction Risk Management and Work Control

- **Topic 1:** Construction Hazard Identification and Risk Assessment
- **Topic 2:** HIRA for Construction Projects and Risk-Matrix Application
- **Topic 3:** Construction Job Safety Analysis and Pre-Task Planning
- **Topic 4:** Advanced Permit to Work for Construction Projects
- **Topic 5:** Construction LOTO and Energy-Isolation Management
- **Topic 6:** Dynamic Risk Assessment and Management of Change
- **Reflection & Review:** Evaluate a high-risk construction activity using HIRA, JSA, permit controls, and residual-risk acceptance criteria.

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Day 3: High-Risk Construction Activities Safety

- **Topic 1:** Construction Work at Height and Fall-Prevention Systems
- **Topic 2:** Scaffolding Safety Management and Inspection Requirements
- **Topic 3:** Excavation, Trenching, and Underground Services Safety
- **Topic 4:** Construction Lifting Operations, Crane, and Rigging Safety
- **Topic 5:** Confined Space Entry and Rescue Planning in Construction
- **Topic 6:** Electrical, Hot Work, Temporary Works, and Demolition Safety
- **Reflection & Review:** Analyse control failures across work at height, lifting, excavation, confined spaces, and other critical construction activities.

Day 4: Contractor Safety, Inspection, and Compliance Assurance

- **Topic 1:** Construction Contractor Safety Management
- **Topic 2:** Contractor Safety Management for Major Construction Projects
- **Topic 3:** HSE Prequalification, Mobilization, and Competency Verification
- **Topic 4:** Advanced Construction Safety Inspection and Audit Techniques
- **Topic 5:** Construction Safety Compliance and Corrective-Action Management
- **Topic 6:** Heavy Equipment, Traffic, and Dropped-Object Prevention
- **Reflection & Review:** Review contractor performance evidence, inspection findings, compliance gaps, and corrective-action priorities.

Day 5: Oil and Gas Construction, SIMOPS, and Emergency Preparedness

- **Topic 1:** Oil and Gas Construction Safety for Refinery and Petrochemical Projects
- **Topic 2:** Process Plant Construction Safety and Hydrocarbon Risk Management
- **Topic 3:** SIMOPS Safety Management for Construction and Operations
- **Topic 4:** Construction and Operations Interface Safety
- **Topic 5:** Construction Emergency Response and Major Incident Preparedness
- **Topic 6:** Pre-Commissioning, Commissioning, and Safe Project Handover
- **Reflection & Review:** Consolidate the construction HSE leadership, SIMOPS, emergency preparedness, and commissioning controls required for safe project delivery.

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FAQ:

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

Participants should have prior experience in HSE, construction, engineering, project management, occupational safety inspection, emergency response, refinery operations, oil and gas operations, or contractor management. A basic understanding of hazard identification, risk assessment, permit-to-work systems, and construction activities is recommended. Formal certification is not mandatory, but the course is designed for professionals with operational or supervisory responsibilities rather than complete beginners.

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

Each day's session is generally structured to last around 4-5 hours, with breaks and interactive activities included. The total course duration spans one week, approximately 20-25 hours of instruction.

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

Construction safety management focuses primarily on hazards created by construction activities, including work at height, scaffolding, excavation, lifting, heavy equipment, electrical work, confined spaces, and contractor coordination. Process safety focuses on preventing major releases, fires, explosions, and loss of containment involving hazardous materials and process systems.

During refinery, petrochemical, brownfield, commissioning, or SIMOPS activities, both disciplines must operate together. Construction work can affect live systems, emergency shutdown arrangements, fire and gas detection, pipelines, utilities, storage systems, and process equipment. Oil and gas facilities incorporate complex process-control, emergency-shutdown, fire-and-gas, and safety systems that require careful interface management during construction and commissioning.

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How This Course is Different from Other Advanced Construction Safety Courses:

This Advanced Construction Safety and HSE Management Training Course is designed around the responsibilities of senior HSE professionals, occupational safety inspection heads, emergency-response experts, and oil and gas operations leaders. Unlike general construction safety courses that focus mainly on basic site rules, personal protective equipment, and worker awareness, this programme addresses safety as a project-governance and operational-control function.

The course integrates advanced construction risk management, contractor safety management, inspection and audit, emergency preparedness, oil and gas process hazards, SIMOPS, and commissioning. It connects greenfield construction safety with brownfield risks, live-plant interfaces, hydrocarbon controls, refinery operations, and EPC contractor accountability.

A major distinguishing feature is its emphasis on proactive leadership. Participants learn how to build a project HSE plan, establish accountability, coordinate multiple employers, assess contractor performance, use leading indicators, and intervene before incidents occur. This reflects the proactive hazard identification, prevention, worker-participation, and continuous-improvement principles recommended for construction safety and health programmes.

The course also treats emergency preparedness as an integrated management responsibility based on risk monitoring, contingency planning, response capacity, and coordinated action. By addressing construction, refinery, petrochemical, and operational interfaces in one programme, it provides a more advanced and industry-specific approach than conventional construction site safety training.