



## **Earthwork Slopes, Benches, Embankments and Bund Walls Training Course**

1 – 5 August 2027  
Manama

## Earthwork Slopes, Benches, Embankments and Bund Walls Training Course

**Ref:** 462\_137142 **Date:** 1 – 5 August 2027 **Location:** Manama **Fees:** 6500 Euro

### Overview

Earthwork Slopes, Benches, Embankments and Bund Walls Training Course is a five-day professional course for civil and geotechnical engineers, construction managers, supervisors, inspectors, safety teams, and contractors who leave with an Earthworks Design and Inspection Plan. Participants connect ground conditions, geometry, stability, water, materials, compaction, plant interfaces, monitoring, quality evidence, and response actions. The course turns separate site controls into an inspection-led earthworks system. Agile Leaders Training Center addresses engineered earth structures through design intent, construction control, and field verification.

### Who Should Attend

- Civil and geotechnical teams responsible for ground assessment and earthwork design intent
- Construction management teams responsible for excavation, fill, sequencing, and temporary works
- Site supervision functions responsible for daily conditions, interfaces, and corrective actions
- Earthworks quality teams responsible for materials, moisture, compaction, testing, and records
- Safety professionals responsible for excavation hazards, access, plant, and emergency arrangements
- Contractors responsible for building and maintaining slopes, benches, embankments, and bund walls

The course assumes participants already work with civil drawings, site activities, inspections, or earthworks specifications and leaves final design approval and jurisdiction-specific authorization to qualified responsible parties.

### Departments and Industries

The course supports departments and industries that create or manage excavations and engineered earth structures.

- Civil construction, geotechnical engineering, and temporary-works functions
- Road, rail, airport, utility, and infrastructure delivery teams
- Mining, quarrying, energy, and industrial-site operations
- Water, drainage, flood-control, and environmental works
- Quality assurance, materials laboratories, and construction-inspection teams
- Health, safety, emergency response, and contractor-management functions

## Learning Objectives

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

- Analyze ground, groundwater, geometry, surcharge, and interface conditions
- Evaluate slope, bench, embankment, and bund-wall control requirements
- Build material, placement, moisture, compaction, and drainage controls
- Apply plant exclusion, access, erosion, and temporary-works arrangements
- Design inspection, monitoring, trigger, and emergency-response processes
- Produce an Earthworks Design and Inspection Plan with traceable hold points

## Course Agenda

### Day 1: Ground Conditions and Earthwork Risk

- Ground Model and Site-Constraint Register
- Soil and Rock Classification Record
- Groundwater, Seepage and Surface-Water Map
- Surcharge and Adjacent-Asset Assessment
- Earthwork Hazard and Failure-Mode Register

### Day 2: Slope and Bench Control

- Excavation Protective-System Selection
- Slope Geometry and Stability Review
- Single and Multiple Bench Configuration
- Crest, Toe and Plant-Exclusion Controls
- Access, Egress and Falling-Material Protection

### Day 3: Embankment and Bund Wall Construction

- Foundation Preparation and Proofing Checklist
- Fill Suitability and Zoning Schedule
- Lift Thickness and Moisture-Conditioning Plan
- Compaction Method and Acceptance Matrix
- Bund-Wall Geometry and Penetration Control

### Day 4: Water, Erosion and Assurance

- Surface and Subsurface Drainage Layout
- Erosion and Sediment-Control Plan
- Earthwork Inspection and Test Plan
- Instrumentation and Movement-Monitoring Schedule
- Trigger-Action-Response and Emergency Plan



## Day 5: Earthworks Inspection Practice

- Suggested Exercise: Diagnose a Distressed Excavation
- Suggested Exercise: Review a Bench and Slope Layout
- Suggested Exercise: Check an Embankment Compaction Lot
- Suggested Exercise: Set Monitoring Triggers and Hold Points
- Capstone Exercise: Earthworks Design and Inspection Plan

## Practical Exercises

Suggested activities connect engineering intent with construction evidence, changing site conditions, and field decisions.

- Suggested activity: assemble a ground model from borehole logs, exposures, groundwater, weather, adjacent assets, traffic, spoil, equipment, and observed distress, then identify design and inspection uncertainties.
- Suggested activity: review slope and bench geometry, protective-system boundaries, surcharge controls, access, spoil placement, plant exclusion, water management, and escalation requirements for an excavation sequence.
- Suggested activity: prepare an embankment and bund-wall control sheet covering foundation approval, fill zoning, lift thickness, moisture range, compaction plan, test frequency, acceptance, drainage, erosion, and defects.
- Suggested activity: combine drawings, responsibilities, method statements, hold points, inspection records, instruments, thresholds, response actions, emergency arrangements, and closeout evidence in the capstone plan.

## FAQs

### What are earthwork slopes, benches, embankments, and bund walls?

Earthwork slopes and benches shape excavated or filled ground to manage stability and access. Embankments are engineered fills that support infrastructure or form raised ground. Bund walls are raised containment, protection, separation, or water-control structures whose performance depends on geometry, materials, compaction, and drainage.

### Who is the earthwork slopes and embankments course for, and what does it assume?

The course suits engineers, construction managers, supervisors, inspectors, safety teams, and contractors working with excavations or engineered fill. It assumes familiarity with site drawings and field controls but does not replace project-specific design, verification, or authorization.



## **How does this earthworks course differ from a soil investigation course?**

This earthworks course focuses on converting ground information into slope, bench, fill, drainage, construction, inspection, and response controls. A soil investigation course concentrates more deeply on planning investigations, sampling, field testing, laboratory testing, ground models, and geotechnical reporting.

## **What controls are needed for excavation sloping and benching?**

Controls should reflect soil and rock conditions, depth, water, weather, surcharge, adjacent structures, equipment, access, spoil, falling material, signs of distress, protective-system limits, inspection frequency, changing conditions, and clear authority to stop work or seek engineered review.

## **How is embankment compaction quality verified?**

Verification links approved material and foundation conditions with lift thickness, moisture conditioning, plant type, passes, trial sections, field density or other specified tests, lot identification, acceptance criteria, nonconformance action, drainage, survey geometry, and traceable inspection records.

## **Conclusion**

Participants leave with an Earthworks Design and Inspection Plan containing ground assumptions, geometry, materials, drainage, construction controls, hold points, tests, monitoring, triggers, and emergency actions. The plan turns dispersed drawings and procedures into a traceable field-control system. It supports consistent decisions as excavation and fill conditions change.