

COURSE OVERVIEW DE0528
GeoTechnical Survey and Data Analysis

Course Title

GeoTechnical Survey and Data Analysis

Course Date/Venue

August 02-06, 2026/TBA Meeting Room, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference

DE0528

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



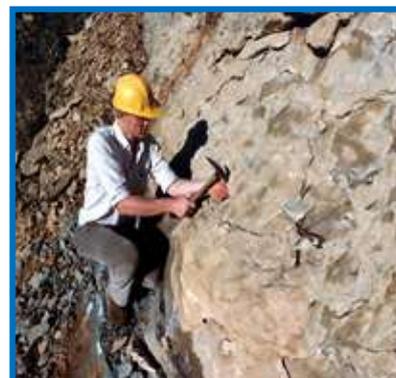
Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is designed to provide participants with a detailed and up-to-date overview of GeoTechnical Survey and Data Analysis. It covers the scope of geotechnical engineering and the importance of geotechnical surveys in construction; the soil formation processes, soil types and properties and the significance of soil classification in geotechnical analysis; the field exploration techniques and the tools and equipment used in geotechnical survey; the subsurface conditions assessment, geotechnical reporting essentials and laboratory testing of soils; the shear strength testing, soil permeability and hydraulic conductivity; the rock mechanics and classification; and the in-situ testing methods, data acquisition and management.



During this interactive course, participants will learn the soil-structure interaction, slope stability analysis and ground improvement techniques; the seismic geotechnical analysis, foundation design principles and numerical modeling in geotechnical analysis; the geotechnical hazards identification and groundwater and drainage control; the pavement subgrade and embankment design and geotechnical considerations in urban development; the project integration and collaboration, quality assurance in geotechnical surveys and geotechnical survey planning; the data visualization and reporting; and the environmental and legal considerations.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on geotechnical survey and data analysis
- Discuss the scope of geotechnical engineering and the importance of geotechnical surveys in construction
- Identify soil formation processes, soil types and properties and the significance of soil classification in geotechnical analysis
- Apply field exploration techniques and identify the tools and equipment used in geotechnical survey
- Assess subsurface conditions and apply geotechnical reporting essentials and laboratory testing of soils
- Carryout shear strength testing, soil permeability and hydraulic conductivity
- Describe rock mechanics and classification and apply in-situ testing methods, data acquisition and management
- Employ soil-structure interaction, slope stability analysis and ground improvement techniques
- Apply seismic geotechnical analysis, foundation design principles and numerical modeling in geotechnical analysis
- Carryout geotechnical hazards identification and groundwater and drainage control
- Illustrate pavement subgrade and embankment design and identify geotechnical considerations in urban development
- Implement project integration and collaboration, quality assurance in geotechnical surveys and geotechnical survey planning
- Apply data visualization and reporting as well as discuss environmental and legal considerations

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of geotechnical survey and data analysis for geotechnical engineers, civil engineers, environmental engineers, construction managers, surveyors, geologists, students and researchers, project managers and those who involved in or interested in fields related to geotechnical engineering, construction, and environmental science.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Haward’s certificates are accredited by the following international accreditation organizations: -

-  British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council for Independent Further and Higher Education** as an **International Centre**. Haward’s certificates are internationally recognized and accredited by the British Accreditation Council (BAC). BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

-  The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology’s courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant’s involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant’s CEU and PDH Transcript of Records upon request.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.



Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Marlon Dragner, is a **Senior Geology & Drilling Engineer** with over **20 years** of extensive experience within the **Oil & Gas** industry. His field of expertise lies extensively in the areas of **Cased Hole Evaluation, Mud Logging, Product Logging Evaluation, Open & Cased Hole Logging, Production Logging & Reservoir Monitoring, Advanced Log/Logging Interpretation Technology, Well Log Interpretation (WLI), Basic Log Analysis, Rigging, Rig Inspection, Rig Sizing, Drilling Rig**

Control & Operation, Rock Properties & Rock Mechanics, Casing & Tubing Design, Well Completion Design & Operations, Well Stimulation & Workover Planning, Applied Drilling Optimization & Well Planning, Well Engineering Operations, Well Control & Blowout Prevention, High Pressure High Temperature Well Control, Horizontal & Multilateral Planning & Operations, Directional & Horizontal Well Techniques & Procedures, Well Hole Cleaning, Formation Evaluation, Reservoir Appraisal & Development, Reservoir Engineering, Advanced Gas Condensate Reservoir Management, Drilling & Completion Technology, Drilling Operation Management, Drill Bit & Drilling Hydraulics, Drilling Project & Risk Management, Drilling & Production Equipment, Directional, Horizontal & Multilateral Drilling, Pressure Drilling, Deep Drilling, Cable Drilling & High Temperature Drilling, Drilling Fluids Technology, Petroleum Engineering, Petroleum Exploration & Production, X-mas Tree & Wellhead Operations, Roustabout, Geological & Engineering Aspects of Horizontal Wells, Geological Control on Horizontal Wells, Geology & Hydrocarbon Potential, Reservoir Geology, Geology of the Oil & Gas Field, Operations & Wellsite Geology, Sedimentology, Pore Space Evolutions, Pore Pressure & Well Control, Oil Industry Orientation, Wireline Operations & Techniques, Special Core Analysis (SCAL), Slickline & Perforating Operations, Well Testing & Perforations, Stuck Pipe Prevention and Stuck Pipe & Fishing Operations.

During Mr. Dragner's career life, he has gained his practical and field experience through his various significant positions and dedication as the **L/MWD Field Specialist, Drilling Optimization Engineer, Surface Data Logger (Data Engineer), Logging Geologist, Geologist** and **Geotechnician** for **Baker Hughes Drilling, Halliburton Drilling Services** and **Siyakula Civil Engineering Laboratory**. He has also worked in various international companies such as **Shell, Chevron, Petronas, Exxon Mobil, Connoco Phillips**, **Forest Oil, Apache North Sea, Venture, Caledonia, BP, PEAK/Centrica, BG, Petro Canada, Nexen, Maersk, ENI, Hurricane Exploration, Canadian Natural Resources, Caithness Oil, PetroSA, PDO** and **Glencore Canada**.

Mr. Dragner has a **Bachelor** degree in **Geology & Geography**. Further, he is a **Certified Instructor/Trainer** and has conducted numerous trainings, seminars, workshops and conferences internationally.



Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US\$ 8,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 02nd of August 2026

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0900	Introduction to Geotechnical Engineering <i>Definition & Scope of Geotechnical Engineering • Importance of Geotechnical Surveys in Construction • Role of Geotechnical Engineers • Overview of Soil & Rock Mechanics</i>
0900 – 0945	Basics of Soil Formation & Classification <i>Soil Formation Processes • Soil Types & Properties • Unified Soil Classification System (USCS) • Significance of Soil Classification in Geotechnical Analysis</i>
0945 – 1000	Break
1000 – 1100	Field Exploration Techniques <i>Objectives of Geotechnical Site Investigation • Surface Reconnaissance & Mapping • Techniques for Sampling (Disturbed & Undisturbed) • Role of Boreholes & Test Pits</i>
1100 – 1200	Tools & Equipment Used in Geotechnical Survey <i>Borehole Drilling Rigs • Penetrometers & Field Test Equipment • Geophysical Survey Tools (Seismic & Resistivity) • GPS & GIS Tools in Geotechnical Applications</i>
1200 – 1215	Break
1215 – 1315	Basics of Subsurface Conditions <i>Understanding Groundwater Levels • Soil Stratification & Profiling • Influence of Weathering on Subsurface Materials • Implications of Subsurface Conditions in Design</i>





1315 – 1420	Geotechnical Reporting Essentials <i>Components of a Geotechnical Report • Importance of Preliminary Data Analysis • Visual Representation of Soil Layers (Logs & Profiles) • Common Challenges in Report Preparation</i>
1420 - 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day One</i>

Day 2: Monday, 03rd of August 2026

0730 – 0830	Laboratory Testing of Soils <i>Sieve Analysis & Grain Size Distribution • Atterberg Limits (Liquid & Plastic Limits) • Compaction Tests (Proctor Test) • Moisture Content Determination</i>
0830 – 0945	Shear Strength Testing <i>Triaxial Shear Test • Direct Shear Test • Unconfined Compression Test • Interpretation of Shear Strength Results</i>
0945 – 1000	<i>Break</i>
1000 – 1100	Soil Permeability & Hydraulic Conductivity <i>Darcy's Law & its Applications • Permeability Testing Methods (Constant & Falling Head) • Factors Affecting Soil Permeability • Importance of Permeability in Foundation Design</i>
1100 – 1200	Rock Mechanics & Classification <i>Rock Mass Characterization (RMR & Q-System) • Uniaxial Compressive Strength of Rocks • Point Load Test for Rock Classification • Fracture & Joint Analysis in Rock Masses</i>
1200 – 1215	<i>Break</i>
1215 – 1345	In-situ Testing Methods <i>Standard Penetration Test (SPT) • Cone Penetration Test (CPT) • Plate Load Test • Pressuremeter Test</i>
1345 - 1420	Data Acquisition & Management <i>Tools for Data Logging in Field Tests • Data Quality Control & Assurance • Handling Inconsistencies in Collected Data • Archiving Field Data for Future Analysis</i>
1420 - 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day Two</i>

Day 3: Tuesday, 04th of August 2026

0730 – 0830	Soil-Structure Interaction <i>Fundamentals of Soil-Structure Interaction • Bearing Capacity & Settlement Analysis • Foundation Types & their Behavior • Load Transfer Mechanisms in Soil</i>
0830 – 0945	Slope Stability Analysis <i>Factors Influencing Slope Stability • Methods of Slope Stability Assessment (Limit Equilibrium, FEM) • Monitoring Techniques for Slopes • Mitigation Measures for Unstable Slopes</i>





0945 – 1000	Break
1000 – 1100	Ground Improvement Techniques Methods of Soil Stabilization (Chemical & Mechanical) • Use of Geosynthetics in Soil Improvement • Preloading & Dewatering Techniques • Vibro-Compaction & Stone Columns
1100 – 1200	Seismic Geotechnical Analysis Impact of Earthquakes on Soil & Foundation Systems • Liquefaction Analysis & Mitigation • Dynamic Soil Properties & Response Spectra • Ground Motion Amplification in Geotechnical Design
1200 – 1215	Break
1215 – 1345	Foundation Design Principles Shallow Foundations: Footing & Raft Design • Deep Foundations: Pile & Caisson Design • Load & Resistance Factor Design (LRFD) • Effects of Lateral & Uplift Loads on Foundations
1345 - 1420	Numerical Modeling in Geotechnical Analysis Introduction to Finite Element Analysis (FEA) • Common Software Tools (PLAXIS, GeoStudio, ABAQUS) • Setting up Numerical Models • Calibration & Validation of Models
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4: Wednesday, 05th of August 2026

0730 – 0830	Geotechnical Hazards Identification Common Geotechnical Risks (Landslides, Sinkholes, etc.) • Hazard Assessment Techniques • Early Warning Systems for Geotechnical Risks • Mitigation & Management Strategies
0830 – 0945	Groundwater & Drainage Control Effects of Groundwater on Geotechnical Systems • Drainage Techniques in Construction • Dewatering Methods & Equipment • Groundwater Monitoring During Construction
0945 – 1000	Break
1000 – 1100	Pavement Subgrade & Embankment Design Characteristics of a Good Subgrade • CBR (California Bearing Ratio) Testing • Embankment Stability & Settlement • Role of Geosynthetics in Pavement Design
1100 – 1200	Geotechnical Considerations in Urban Development Challenges in Urban Geotechnical Projects • Impact of Underground Utilities on Soil Properties • Urban Excavation & Tunneling Challenges • Case Studies of Urban Geotechnical Failures
1200 – 1215	Break
1215 – 1345	Project Integration & Collaboration Communication Between Geotechnical & Structural Teams • Importance of Geotechnical Input in Project Planning • Addressing Geotechnical Challenges in Multidisciplinary Projects • Case Studies on Collaborative Problem-Solving



1345 - 1420	Quality Assurance in Geotechnical Surveys Standards & Codes in Geotechnical Investigations • Ensuring Consistency in Field & Lab Results • Peer Review & Validation Processes • Importance of Ethical Practices in Geotechnical Projects
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

Day 5: Thursday, 06th of August 2026

0730 - 0830	Geotechnical Survey Planning Site Selection Criteria for Investigations • Budgeting & Resource Allocation for Surveys • Scheduling & Logistics for Geotechnical Surveys • Risk Management in Survey Planning
0830 - 0945	Case Studies of Geotechnical Failures Analysis of Well-Known Failures (e.g., Dam Collapses, Slope Failures) • Lessons Learned from Geotechnical Disasters • Preventative Measures for Future Projects • Role of Monitoring in Early Failure Detection
0945 - 1000	Break
1000 - 1100	Data Visualization & Reporting Tools for Geotechnical Data Visualization (e.g., GIS, AutoCAD) • Creating Soil Profiles & Cross-Sections • Interpreting & Presenting Data to Stakeholders • Effective Use of Charts & Graphs in Reporting
1100 - 1200	Environmental & Legal Considerations Environmental Impact of Geotechnical Activities • Regulations Governing Geotechnical Projects • Sustainable Practices in Geotechnical Engineering • Permitting & Compliance Requirements
1200 - 1215	Break
1215 - 1315	Future Trends in Geotechnical Engineering Role of AI & Machine Learning in Data Analysis • Advances in Geotechnical Monitoring Tools • Use of Remote Sensing in Subsurface Investigations • Emerging Techniques in Soil & Rock Testing
1345 - 1400	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1400 - 1415	POST-TEST
1415 - 1430	Presentation of Course Certificates
1430	Lunch & End of Course



Practical Sessions

This practical highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org