

**COURSE OVERVIEW SE0135**  
**Construction, Maintenance and Restructuring of Building and Structures**

**Course Title**

Construction, Maintenance and Restructuring of Building and Structures

**Course Date/Venue**

Session 1: May 25-29, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: November 03-07, 2025/Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



**Course Reference**

SE0135

**Course Duration/Credits**

Five days/3.0 CEUs/30.0 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 a good primer for Facility Managers (FM) and construction trades involved in the construction and rehabilitation of concrete buildings. The participants in this course will get a good working knowledge of the value of concrete as a construction material, which is readily available, relatively inexpensive, and environmentally friendly to manufacture and use.



This course is designed to provide participants with a detailed and up-to-date overview of building, maintenance, construction and concrete works. It covers the need for planning building facilities for comfort of the occupants as well as the challenges in building construction; the building services fundamentals and safety procedures in building maintenance and construction; the lightning and electrical maintenance, plumbing and pipe fitting; the construction drawings, plans and schematics; the construction materials, construction aids, finishes and fittings; the roof systems, roof and attic insulation; and the properties of reinforced concrete mixtures.

Further, the course will also discuss the calculation of concrete volume and percentages of its components; the advantages of admixtures in concrete preparation; the importance of correct water-cement ratios and its impact in concrete workability and strength; the common building utility and communication systems including the electrical wiring principles used in building wiring and fixtures; and the concrete rehabilitation methods and damage assessment of reinforced concrete structures.

### **Course Objectives**

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

- Apply an up-to-date knowledge and skills in building maintenance, construction and concrete works
- Recognize the need for planning building facilities for comfort of the occupants as well as the challenges in building construction
- Discuss building services fundamentals and implement safety procedures in building maintenance and construction
- Implement lightning and electrical maintenance as well as plumbing and pipe fitting
- Illustrate construction drawings, plans and schematics and recognize construction materials, construction aids, finishes and fittings
- Explain roof systems and apply roof and attic insulation
- Identify the properties of reinforced concrete mixtures
- Calculate concrete volume and percentages of its components
- Discuss the advantages of admixtures in concrete preparation
- Recognize the importance of correct water-cement ratios and its impact in concrete workability and strength
- Describe common building utility and communication systems including the electrical wiring principles used in building wiring and fixtures
- Employ concrete rehabilitation methods and carry out damage assessment of reinforced concrete structures

### **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 consideration of building maintenance, construction and rehabilitation of concrete building for facility managers (FM) and construction trades involved in the construction and rehabilitation of concrete buildings.

### 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

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**. 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.

### Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

### 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. George Soul, PE, MSc, BSc**, is a **Senior Civil & Structural Engineer** with over **30 years** of extensive experience within the **Oil & Gas** and **Construction** industries. His expertise covers **Pavement Analysis & Design, Structural Design & Analysis, Road Pavement Design, Highway Geometric Design, Railway Engineering, Structural Design, Building & Construction Design, Steel Structures Design, Architectural & Mechanical Design Drawings, Plant Design Drawings, Engineering Drawings, Codes & Standards Implementation, P&ID Development, Reading & Interpretation, Working Diagrams & Flow Charts** and **Field Sketching** as well as **Construction Management, Construction Site Management, Project Lifecycle Design, Project Management, Quality Management** and **Construction Health & Safety Management**. He is currently the **Chief Engineering Consultant** of **ArcPro** where he manages and oversees the design and master planning of all industrial construction projects, including project planning and management.

During his career life, Mr. Soul held significant positions such as the **Chief Engineering Consultant, Design Consultant & Engineer, Construction Manager, Site Engineer** and **Project Manager** for numerous **EU projects** and international companies like the **Mobil Oil**. He has handled major projects which include water and waste water installation, electrical power and natural gas installation, roads, pavements, civil, commercial and industrial construction projects, using specific software for producing design drawings, schematic diagrams and process flow diagrams.

Mr. Soul is a **Registered Professional Engineer** with a **Post Graduate** degree in **Project Management** from the **University of Wales Zurich (Switzerland)** and has **Master** degrees in **Civil Engineering** and **Construction Management** from the **Aristotle University Thessaloniki (Greece)** and a **Certified Instructor/Trainer**. Further, he is an active member of **various professional engineering affiliations** such as the **Technical Chamber of Greece (TEE)**, **Verein Deutscher Ingenieure (VDI)**, **Greek Civil Engineer (SPME)** and the **Swiss Institute of Steel Construction (SZS)**.

### 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 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**

|             |                                                                                                                                                                                                                                                                  |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0730 – 0800 | <i>Registration &amp; Coffee</i>                                                                                                                                                                                                                                 |
| 0800 – 0815 | <i>Welcome &amp; Introduction</i>                                                                                                                                                                                                                                |
| 0815 – 0830 | <b>Pre-Test</b>                                                                                                                                                                                                                                                  |
| 0830 – 0930 | <b>Building Services Fundamentals</b><br><i>Plumbing • Lighting &amp; Electrical • Air Conditioning &amp; Heating • Lifts • Communication Systems • Accessibility</i>                                                                                            |
| 0930 – 0945 | <i>Break</i>                                                                                                                                                                                                                                                     |
| 0945 – 1100 | <b>Safety Procedures in Building Maintenance &amp; Construction</b><br><i>Identification &amp; Proper Use of Hand Tools • Hazards in the Performance of Building Maintenance • Proper Clothing and Personal Protection • Proper Use &amp; Care of Hand Tools</i> |
| 1100 – 1230 | <b>Lighting &amp; Electrical Maintenance</b><br><i>Install Light Switches • Install Receptacles and Light Fixtures • Connect Circuits to Panel Boxes • Energy Consumption Efficiency • Appliance Function</i>                                                    |
| 1230 – 1245 | <i>Break</i>                                                                                                                                                                                                                                                     |
| 1245 – 1420 | <b>Plumbing &amp; Pipe Fitting</b><br><i>Install &amp; Repair Plumbing Fixtures &amp; Under-Sink Garbage Disposal Units • Cut &amp; Thread Pipes • Cold Water Supply Systems &amp; Sewage Systems • Copper Tubing</i>                                            |
| 1420 – 1430 | <b>Recap</b><br><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 &amp; End of Day One</i>                                                                                                                                                                                                                                |

#### **Day 2**

|             |                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0730 – 0930 | <b>Construction Drawings, Plans &amp; Schematics</b><br><i>Reading &amp; Interpreting Engineering Drawings • Dimensioning • Building Construction Methods • Basements • Floors • Roofs • Rebar Schedule Drawings • Building Plans • Architectural Drawings</i> |
| 0930 – 0945 | <i>Break</i>                                                                                                                                                                                                                                                   |
| 0945 – 1100 | <b>Construction Materials</b><br><i>Concrete &amp; Masonry • Steel Beams &amp; Shapes • Wood • Reinforced Concrete • Glass • Sheetrock • Hardyplank • Pre-Fabricated Building Construction</i>                                                                 |
| 1100 – 1230 | <b>Construction Aids</b><br><i>Scaffolding • Formwork for Pouring Concrete • Ladders • Mobile Cranes • Tower Cranes • Shoring • Safety Requirements (OSHA and HSE)</i>                                                                                         |
| 1230 – 1245 | <i>Break</i>                                                                                                                                                                                                                                                   |
| 1245 – 1420 | <b>Finishes &amp; Fittings</b><br><i>Floor Finishes • Wall Finishes • Doors &amp; Door Frames • Garage Doors • Windows &amp; Window Frames • Ceilings, False Ceilings &amp; Ceiling Panels • Paints &amp; Painting</i>                                         |
| 1420 – 1430 | <b>Recap</b><br><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 &amp; End of Day Two</i>                                                                                                                                                                                                                              |

### Day 3

|             |                                                                                                                                                                                         |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0730 – 0930 | <b>Roof Systems</b><br>Roof Trusses • Roof Types • Metal Cladding • Shingles • Masonry Tiles & Synthetic Fiber Tiles                                                                    |
| 0930 – 0945 | Break                                                                                                                                                                                   |
| 0945 – 1100 | <b>Roof &amp; Attic Insulation</b><br>Insulation Classification - R-Value • Insulation Types • Energy Efficiency/Savings                                                                |
| 1100 – 1230 | <b>Concrete</b><br>Concrete Components • Cement Types • Aggregate Types • Chemical Reactions with Surrounding Environment • Environmental Friendliness of Concrete                      |
| 1230 – 1245 | Break                                                                                                                                                                                   |
| 1245 – 1420 | <b>Concrete Strength</b><br>Structure & Properties of Concrete • Sample Testing of Concrete Mixtures • Water-to-Cement Ratios & their Effect on Concrete Strength                       |
| 1420 – 1430 | <b>Recap</b><br>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

|             |                                                                                                                                                                                                                                                                               |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0730 – 0930 | <b>Concrete in Practice</b><br>Dusting Concrete Surfaces • Scaling Concrete Surfaces • Cracking Concrete Surfaces • Cracking Concrete Surfaces                                                                                                                                |
| 0930 – 0945 | Break                                                                                                                                                                                                                                                                         |
| 0945 – 1100 | <b>Concrete in Practice (cont'd)</b><br>Plastic Shrinkage Cracking • Cracks in Concrete Basement Walls • Curing-in-Place Concrete • Finishing Concrete Flatwork • De-Lamination of Troweled Concrete • Flowable Fill Materials • Grout                                        |
| 1100 – 1230 | <b>Concrete in Practice (cont'd)</b><br>Loss of Air Content in Pumped Concrete • Jobsite Addition of Water to the Concrete Mixture • Ordering Ready-Mix Concrete • Self-Consolidating Concrete • High-Strength Concrete • Structural Lightweight Concrete • Pervious Concrete |
| 1230 – 1245 | Break                                                                                                                                                                                                                                                                         |
| 1245 – 1420 | <b>Concrete in Practice (cont'd)</b><br>Chemical Admixtures for Concrete • Supplementary Cementitious Materials • Curling of Concrete Slabs • Joints in Concrete Slabs on Grade • Vapor Retarders Under Slabs on Grade                                                        |
| 1420 – 1430 | <b>Recap</b><br>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**

|             |                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0730 – 0930 | <b>Concrete In Practice (cont'd)</b><br><i>Cold Weather Concreting • Hot Weather Concreting • Strength of in-Place Concrete • Testing Compressive Strength of Concrete</i>                                                                           |
| 0930 – 0945 | <i>Break</i>                                                                                                                                                                                                                                         |
| 0945 -1100  | <b>Concrete Rehabilitation Methods</b><br><i>Principles &amp; Methods for Rehabilitating Damaged Concrete • Rehabilitaion of Concrete Damage Due to Reinforcement Corrosion • Carbon-Induced Corrosion on Building Façades and Elevated Walkways</i> |
| 1100 – 1200 | <b>Damage Assessment of Reinforced Concrete Structures</b><br><i>Causes of Concrete &amp; Reinforced Concrete Damage • Monitoring Techniques for Reinforced Concrete Durability • Additional Preventive Measures</i>                                 |
| 1200 – 1215 | <i>Break</i>                                                                                                                                                                                                                                         |
| 1215 – 1300 | <b>Class Forum for Open Topics Discussion</b>                                                                                                                                                                                                        |
| 1300 – 1315 | <b>Course Conclusion</b><br><i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>                                                                                 |
| 1315 – 1415 | <b>COMPETENCY EXAM</b>                                                                                                                                                                                                                               |
| 1415 – 1430 | <i>Presentation of Course Certificates</i>                                                                                                                                                                                                           |
| 1430        | <i>Lunch &amp; End of Course</i>                                                                                                                                                                                                                     |

**Practical Sessions**

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



**Course Coordinator**

Mari Nakintu, Tel: +971 2 30 91 714, Email: [mari1@haward.org](mailto:mari1@haward.org)