COURSE OVERVIEW SE0180
Structural Engineering

Course Title
Structural Engineering

Course Reference
SE0180

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Date/Venue

Session(s)	Date	Venue
1	February 11-15, 2024	Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey
2	March 03-07, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar

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.

Structural Engineering deals with the analysis and design aspects, the basic purpose of which is to ensure a safe, functional and economical structure. While designing, the designer constantly interacts with specialist like architects, operational managers, etc. Once the design is finalized, the implementation takes involvement of people to handle aspects like statutory approvals, planning, quality assurance, material procurement, etc.

The entire exercise can be undertaken in highly coordinated way if everyone involves understand the 'project language', which is combination of designs and specifications. To understand the language fully, it is necessary to appreciate the principles of structural analysis & design and a course on this topic comes handy here.

The participants of the workshop will gain the basic knowledge of structural engineering that includes principles of analysis of structures and their application, behaviour of materials under loading, selection of construction materials and design fundamentals for RCC & Steel structures. The emphasis has been kept on the determination of nature & quantum of stress developed under loads and the way structures offer resistance to it. Being the most widely used construction materials, the RCC & steel has been covered in detail though masonry & timber have also been described briefly.

Course Objectives

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

- Apply and gain an in-depth knowledge on structural engineering
- Identify the role of structural engineer
- Explain the behavior of structural members under loading
- Apply the concept of stress functions like tension, compression, shear and bending
- Use the basic concepts for analysis of statically determinate and indeterminate structures
- Analyze deformation of members under loading
- Discuss the significance of material properties in design
- Perform basic design of reinforced cement concrete structures, steel structures and masonry and timber structural members

Who should attend

This course provides an overview of all significant aspects and considerations of structural engineering for managers, engineers, supervisors, foremen and technologists of all disciplines who are seeking good knowledge of structural engineering.

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

Istanbul	**US$ 6,000** per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	**US$ 6,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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: -

- 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.

- 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.

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. Steve Magalios, MSc, BSc, is a **Survey & Pipeline Engineer** with over **35 years** of extensive **On-shore/Offshore** experience in the **Oil & Gas**, **Construction**, **Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **Civil Engineering Design**, **Civil Building Maintenance**, **Structural Reliability Engineering**, **Materials & Methods for Construction & Repair**, **Reinforced Concrete Structures Protection**, **Geosynthetics & Ground Improvement Methods**, **Blueprint Reading**, **Blue Print Interpretation**, **Blue Print Documentation**, **Drafting & Interpretation**, Mechanical **Drawings**, **P&ID**, **Diagrams**, **Design Drawing** Interpretation, **Flow Diagram** Symbols, **Land Surveying & Property Evaluation**, **Drawing Interpretation**, **Cartographic** Representation, Soil Classification, **Cadastral Surveying** & Boundary Definition, **Project Engineering** & Design, **Construction** Management, **Construction** Supervision, **Project Planning** & Execution, **Site Management**, **Site Supervision**, Effective **Resource Management**, **Project Evaluation**, **FEED** Management, **EPC Projects** Design, **Engineering Management** & Coordination, Formulating **Strategies**, **Project Management** & Implementation, **Project Completion & Workover**, **Strategic Planning** Activities, Field Inspections, Quality Control and Team Management. He is also well-versed in Lean Gas, Sour Gas, Condensate, **Compressors**, **Pumps**, Flare Knockout Drum, Block **Valve** Stations, New Slug Catcher, Natural **Gas Pipeline** & Network, Scraper Traps, Burn Pits, Fibre Optic Cable, Control Rooms, SCADA System, Risk Assessment, HSE Plan & Procedures, Quality Plan & Procedures Assessment & Control, Safety & Compliance Management, Permit-to-Work Issuer, ASME, API, ANSI, ASTM, BS, NACE, ARMCO & KOC Standards, MS Office tools, AutoCAD, GIS, ArcInfo, ArcView, Autodesk Map and various programming languages such as FORTRAN, BASIC and AUTOLISP. He is currently the **Construction Team Leader & Lead Pipeline Engineer** of **Penspen International Limited**, wherein he is responsible in overseeing the implementation of health, safety, environment system as well as quality assurance and quality control system of the projects.

During his career, Mr. Magalios has gained his expertise and thorough practical experience through challenging positions such as a **Project Manager**, Deputy **PMS Manager**, **Project Site Construction Manager**, **Environmental Auditor**, **Supervision Head**, **Onshore & Offshore Engineer**, **Project Construction Lead Supervising Engineer**, **Lead Site Engineer**, **Senior Site Engineer**, **Chartered Professional Surveyor Engineer**, **Lead Engineer**, Contractor, Regional Planner, R.O. W. Coordinator and Site Representative from various international companies such as Eptisa Servicios De Ingenieria S.L., J/V Karayiannis S.A. – Intracom Constructions S.A, Ergaz Ltd., Elpet Valkaniki S. A. – Asprofos S.A., J/V Depa S.A. / Ple Hellas Ltd, Strabo S.A., just to name a few.

Mr. Magalios has **Master** and **Bachelor** degree's in **Surveying Engineering** from the **University of New Brunswick**, **Canada** and the **National Technical University of Athens**, **Greece**, respectively. He has further obtained a Level 4B Certificates in Project Management from the National & Kapodistrian University of Athens, Greece and Environmental Auditing from the Environmental Auditors Registration Association (EARA). Moreover, he is a **Certified Instructor/Trainer**, a **Chartered Engineer** of Technical Chamber of Greece and has delivered numerous trainings, workshops, seminars, courses and conferences internationally.

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	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Structural Engineering***
0930 – 0945	*Break*
0945 – 1100	***Principles of Strength of Material*** *Theory of Elasticity*
1100 – 1215	***Principles of Strength of Material (cont'd)*** *Stress-Strain Characteristics*
1215 – 1230	*Break*
1230 - 1330	***Principles of Strength of Material (cont'd)*** *Sectional Properties*
1330 – 1420	***Principles of Strength of Material (cont'd)*** *Deflection & Deformation*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Structural Analysis*** *Principle of Mechanics • Determinate & Indeterminate Structures Determination of Stress Functions (Direct, Bending & Shear Stresses)*
0930 – 0945	*Break*
0945 – 1100	***Structural Analysis (cont'd)*** *Analysis of Statically Determinate Structures • Analysis of Static Indeterminate Structures • Analysis of Deformation under Loading*
1100 – 1215	***Design Philosophies*** *Material Behavior under Stress • Working Stress Design*
1215 – 1230	*Break*
1230 – 1420	***Design Philosophies (cont'd)*** *Limit State Design • Loads*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Design Procedure of Reinforced Cement Concrete (RCC) Structures*** *Material & Components • Stress Behavior*
0930 – 0945	*Break*
0945 – 1100	***Design Procedure of Reinforced Cement Concrete (RCC) Structures (cont'd)*** *Ultimate & Permissible Stresses • Design of Beams & Slabs*
1100 – 1215	***Design Procedure of Reinforced Cement Concrete (RCC) Structures (cont'd)*** *Design of Walls & Columns • Design of Frames*

1215 – 1230	*Break*
1230 – 1420	***Design Procedure of Reinforced Cement Concrete (RCC) Structures (cont'd)*** *Prestressed Concrete Design*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Design Procedure of Steel Structures*** *Materials & Properties • Stress Behaviour • Methods & Design of Fastenings*
0930 – 0945	*Break*
0945 – 1100	***Design Procedure of Steel Structures (cont'd)*** *Design of Beams • Design of Columns & Struts • Design of Tension Members*
1100 – 1215	***Design Procedure of Steel Structures (cont'd)*** *Design of Trusses • Design of Built Up Sections*
1215 – 1230	*Break*
1230 – 1420	***Design Procedure of Steel Structures (cont'd)*** *Limit State Design*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Design of Masonry & Wooden Structures*** *Properties of Masonry • Design of Walls • Design of Columns*
0930 – 0945	*Break*
0945 – 1100	***Design of Masonry & Wooden Structures (cont'd)*** *Construction of Arches • Material & Properties of Wood • Preservation Methods*
1100 - 1215	***Design of Masonry & Wooden Structures (cont'd)*** *Permissible Stresses • Design of Columns & Beams*
1215 – 1230	*Break*
1230 – 1345	***Summary, Open Forum & Closing***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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

Course Coordinator

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