COURSE OVERVIEW GE0200
Marine Engineering Drawing

Course Title
Marine Engineering Drawing

Course Date/Venue
Session 1: January 13-17, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: August 10-14, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
GE0200

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

Course Description

This practical and highly-interactive course includes practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date knowledge of detailed engineering drawings, codes and standards. It covers the interpretation of drawings in a multi-discipline environment such as plant layout, mechanical, structural, instrumentation and piping (P&ID); the mechanical engineering drawings from design information; and the interpretation of codes, standards and specifications in engineering drawings.

During the course, participants will be able to prepare hand sketches of a number of mechanical components; participate in a series of blueprint reading exercises; and read, interpret and extract information from mechanical & piping arrangement drawings and piping and instrumentation drawings (P&ID).

Further, the course will also discuss the B31.1 and B31.3 codes; level, flow, pressure and temperature variables; the control valves, relief valves and closed control loops; and the drawing representation and interpretation

Course Objectives

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

- Interpret drawings in a multi discipline environment such as plant layout, mechanical, structural, instrumentation and piping (P&ID)
- Produce mechanical engineering drawings from design information
- Interpret codes, standards and specifications and apply them in engineering drawings
- Prepare hand sketches of a number of mechanical components and participate in a series of blueprint reading exercises
- Read, interpret and extract information from mechanical & piping arrangement drawings and piping & instrumentation drawings (P&ID)

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 covers systematic techniques on P&ID reading, interpretation and developing of detailed engineering drawings, codes and standards for managers, engineers, supervisors and other technical staff. Further, the course is essential for designers and draftspersons in the plant design field as well as for piping fabricators and suppliers.

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.

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 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.

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. Luis Manuel is a **Senior Structural Engineer** with over **25 years** of extensive experience in the **Oil & Gas Industry**. He is an **Expert** in the areas of **Structural Analysis & Design**, **Dynamic Analysis Reinforced Concrete Structure**, **Engineering Drawings**, **Standards & Codes**, **Naval Architecture**, **Stress Analysis**, **Underwater Inspection & Maintenance**, **Assessment Engineering**, **Regulatory Compliance Inspections**, and **Finite Element Analysis**. **Presently**, Mr. Manuel is the **Technical Advisor** and **Senior Structural Engineer** of a leading **engineering consultancy company**, where he leads in all **Structural Engineering** related operations, **coordinates structural activities** for **platform modifications**, mobilizes the **preparation of detailed drawings**, the **construction work scope**, the **development of structural material take-off reports**, **analyses reports**, **structural details** and **welding details**, **carry out advanced assessment analyses** of **existing structures** and **special fatigue investigations**. He had also been heavily involved in the **development of instruction materials** as authorized by **EDI** (**Engineering Dynamic Incorporated**) and the training of engineers on the **SACS** software (**Structural Analysis Computer System**). He had gained his expertise & thorough practical experience through his stint with numerous **international organizations** including **Chevron**, **ExxonMobil**, **W.S.Atkins**, **MSL**, **Atlas Engineering**, **Heerema**, the **US Navy**, **Ingalls**, **Textron** and **Barnett & Casbarian**.

During his long career life, Mr. Manuel has accomplished many challenging assignments such as **performing linear elastic SACS® analyses for the strength, seismic and fatigue assessment** of various platforms; the **supervision of the data recording for underwater inspection by ROV**; generating **topside structural inspections** of **existing platforms** to **document structural deficiencies** and **corrosion impingement**; designed and produced **fabrication drawings** for **updating and rehabilitating an existing platform**; **performed analysis** and **developed construction drawings**; provided the **design** and **installation/rigging drawings** for the **transportation of modules**; **supplying reinforcement analysis** for **helidecks slated** for **relocation** and their corresponding reuse offshore; managing the **design** of **transportation cradle** and **lifting sling** for the **installation** of **jacket structures**; producing designs on various **green field structures** such as **tripods** and **4-leg platforms**; creating the **deck analysis** and **design** of an **overhead crane rail system**; preparing the **fabrication drawings** for the **strengthening** and the **modification** of an **international barge** and drafting out the **structural repairs** of a **cruise ship**.

Mr. Manuel has a **Bachelor** degree in **Mechanical Engineering** from the **State University of New York**. Further, he is a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), a **Certified Instructor/Trainer** and the **author** of the book "**Offshore Platforms Design**" and the "**SACS Software Training Module**".

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*** *Plant Layout Disciplines ● Defining Priorities in Design Drafting ● Orthographic Projection ● Isometric Projection ● Linework & Symbology*
0930 – 0945	*Break*
0945 – 1100	***Working Drawings*** *Mechanical ● Structural, Piping & Instrumentation ● Title Blocks ● Revisions ● Metric & Imperial Scales ● Dimensioning*
1100 – 1230	***Field Sketching*** *Freehand Sketching & Lettering ● Notes ● Sketching in the Field or Plant*
1230 – 1245	*Break*
1245 – 1420	***Field Sketching (cont'd)*** *Ensuring that Sufficient Information is Provided on Sketch*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Plant Design Drawing Interpretation*** *Terminology Used in Plant Design Drawings ● Dimensioning*
0930 – 0945	*Break*
0945 – 1115	***Plant Design Drawing Interpretation (cont'd)*** *Drafting & Interpretation Examples*
1115 – 1215	***Piping Terminology*** *Process Flow Diagram ● Development of Process & Instrumentation Diagram (P&ID)*
1215 – 1230	*Break*
1230 – 1420	***Piping Terminology (cont'd)*** *Piping & Instrumentation Functions*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Piping Drawing Interpretation*** *Piping Arrangements ● Isometrics ● Piping Documentation ● Specifications ● Instrumentation Specs*
0930 – 0945	*Break*
0945 – 1100	***Piping Drawing Interpretation (cont'd)*** *Components ● Fittings & Valve Functions*
1100 – 1215	***Piping Drawings*** *Dimensioning & Drafting Isometrics ● Bills of Material ● P&ID Development ● Engineering Design*

1215 – 1230	*Break*
1230 – 1420	***Piping Drawings (cont'd)*** *Equipment Design ● Equipment Sizing & Selection ● Introduction to Flow Analysis*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

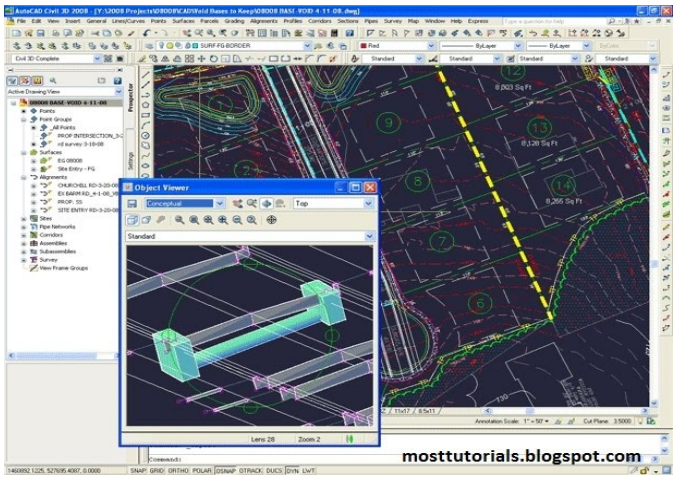
0730 – 0930	***B31.1, B31.3 Codes*** *Scope of Code Rules ● Intent of the Code*
0930 – 0945	*Break*
0945 – 1100	***B31.1, B31.3 Codes (cont'd)*** *Operations & Scope ● Piping Design Conditions*
1100 – 1215	***B31.1, B31.3 Codes (cont'd)*** *Code Applicability ● Responsibilities*
1215 – 1230	*Break*
1230 – 1420	***B31.1, B31.3 Codes (cont'd)*** *Piping Design Criteria*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Instrumentation*** *Level, Flow, Pressure & Temperature Variables ● Control Valves & Sets*
0830 – 0930	***Instrumentation (cont'd)*** *Relief Valves ● Closed Control Loops*
0930 – 0945	*Break*
0945 – 1200	***Piping & Instrumentation Drafting Standards*** *Drawing Representation ● Drawing Interpretation*
1200 – 1215	*Break*
1215 – 1345	***Q & A Discussion & Review***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the "AutoCAD" software.



AutoCAD

Course Coordinator

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