COURSE OVERVIEW GE0200

Detailed Engineering Drawings, Codes & Standards

P&ID Reading, Interpretation & Developing

Course Title

Detailed Engineering Drawings, Codes & Standards: *P&ID Reading, Interpretation & Developing*

Course Reference

GE0200

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Date/Venue

Session(s)	Date	Venue
1	February 02-06, 2025	Oryx Meeting Room, Double Tree by Hilton Al Saad, Doha, Qatar
2	June 16-20, 2025	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
3	September 07-11, 2025	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
4	December 07-11, 2025	Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA

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.

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.

Accommodation

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

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.

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:

Dr. Tony Dimitry, PhD, MSc, BSc, is a **Senior Mechanical Maintenance Engineer** with over **35 years** of industrial experience within the **Petroleum**, **Oil & Gas**, **Petrochemical**, **Nuclear & Power** industries. His expertise covers Revising **Engineering Drawings**, **Engineering Drawings & Diagrams**, **AutoCAD & GIS Support**, Retailed **Engineering Drawings**, Codes & Standards, **Mechanical Diagrams** Interpretation, Reading **Engineering Drawings**, **Process & Project Drawings**, **Engineering Drawings** Interpretation, **Piping Layouts & Isometrics**, **P&ID** Reading & Interpretation, Glass Reinforced Epoxy (**GRE**), Glass Reinforced Pipes (**GRP**), Glass Reinforced Vent (**GRV**), **Mechanical Pipe Fittings**, **Flange Joint Assembly**, Adhesive Bond Lamination, **Butt Jointing**, **Joint & Spool Production**, **Isometric Drawings**, **Flange Assembly** Method, **Fabrication & Jointing**, Jointing & Spool Fabrication, **Pipe Cuttings**, **Flange Bolt Tightening** Sequence, **Hydro Testing**, **Failure Analysis Methodologies**, Machinery Root Cause Failure Analysis (**RCFA**), **Preventive Maintenance** & **Condition Monitoring**, Reliability Centred Maintenance (**RCM**), Risk Based Inspection (**RBI**), Root Cause Analysis (**RCA**), **Planning & Managing Plant Turnaround**, **Scheduling Maintenance**, **Data Archive Maintenance**, **Master Milestone Schedule** (**MMS**), Piping & Mechanical **Vibration Analysis**, Preventive & Predictive Maintenance (**PPM**) **Maintenance**, Condition Based Monitoring (**CBM**), Risk Based Assessment (**RBA**), Planning & Preventive Maintenance, **Maintenance** Management (**Preventive**, **Predictive**, **Breakdown**), **Reliability** Management, Rotating Equipment, Scheduling & Cost Control, **Maximo** Foundation, **Maximo** Managing Work, **Asset Management Best Practices**, **Resource Management**, **Inventory Set-up & Management**, **Work Management**, Automatic & Work Flows & Escalations, **Vibration Analysis**, **Heat Exchanger**, **Siemens**, **Gas & Steam Turbine Maintenance**, **Pumps & Compressors**, **Turbo-Expanders**, **Fractional Columns**, **Boilers**, **Cryogenic Pumps** for **LNG**, **Electromechanical Maintenance**, **Machinery Alignment**, **Lubrication Technology**, **Bearing & Rotary Machine**, **Blower & Fan**, **Shaft Repair**, **Safety Relief Valves**, **Pipelines**, **Piping**, **Pressure Vessels**, **Process Equipment**, **Diesel Engine & Crane Maintenance**, **Tanks & Tank Farms**, **Pneumatic System**, **Static Equipment**, **FMEA**, **Corrosion**, **Metallurgy**, **Thermal** and **Electrical Modelling** of **Battery Problems**. He is also well-versed in various simulators such as **i-Learn Vibration**, **AutoCAD**, **Word Access**, **Aspen One**, **Fortran**, **VB**, **C ANSYS**, **ABAQUS**, **DYNA3D**, **Ceasar**, **Caepipe**, **MS Project**, **Primavera**, **MS Excel**, **Maximo**, **Automation Studio** and **SAP**. Currently, he is the **Maintenance Manager** of the PPC Incorporation wherein he is responsible for the maintenance and upgrading of all **Power Station** components.

During his career life, Dr. Dimitry held a significant positions such as the **Operations Engineers**, **Technical Trainer**, **HSE Contracts Engineer**, **Boilers Section Engineer**, **Senior Engineer**, **Trainee Mechanical Engineer**, **Engineer**, **Turbines Section Head**, **Professor**, **Lecturer/Instructor** and **Teaching Assistant** from various multinational companies like **Chloride Silent Power Ltd.**, **Technical University of Crete**, **National Nuclear Corporation**, **UMIST Aliveri Power Station** and **HFO Fired Power Station**.

Dr. Dimitry has **PhD**, **Master** and **Bachelor** degrees in **Mechanical Engineering** from the **Victory University of Manchester** and the **University of Newcastle**, **UK** respectively. Further, he is a **Certified Instructor/Trainer,** a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and an associate member of the American Society of Mechanical Engineers (**ASME**) and Institution of Mechanical Engineers (**IMechE**). He has further delivered various trainings, seminars, courses, workshops and conferences internationally

Course Fee

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.
Abu Dhabi	**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.
Dubai	**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.
Al Khobar	**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.

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

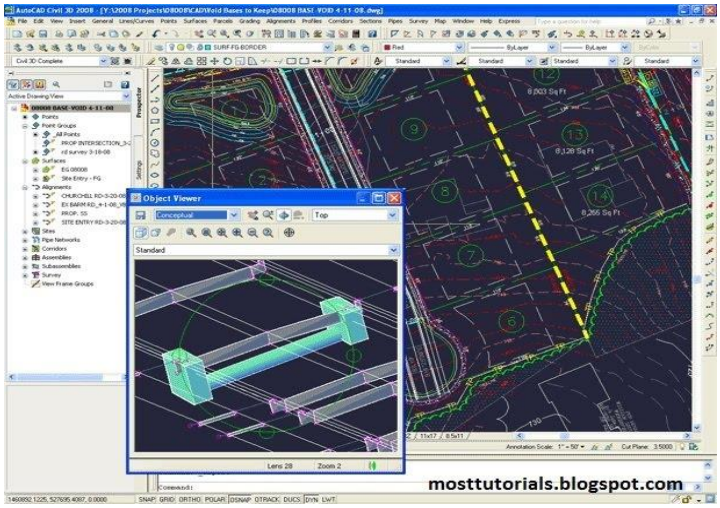
0730 – 0930	***B31.1, B31.3 Codes*** *Scope of Code Rules ● Intent of the Code*
0930 – 0945	*Break*
0945 – 1100	***B31.1, B31.3 Codes (cont'd)*** *Operations & Scope ● Piping Design Conditions*
1100 – 1215	***B31.1, B31.3 Codes (cont'd)*** *Code Applicability ● Responsibilities*
1215 – 1230	*Break*
1230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