

COURSE OVERVIEW GE0209
Electrical / Instrumentation Design and Drafting

Course Title

Electrical / Instrumentation Design and Drafting

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/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

GE0209

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 on reading of piping and instrument drawing. It covers the introduction to standards and regulations related to P&ID covering ANSI, ASME, ASTM, API, CSA, ISA and OSHA; the preliminary engineering drawings including drawing in project lifestyle, document control, block flow diagram (BFD), process flow diagram (PFD) and PFD symbols; and the piping and instrumentation diagrams, P&ID symbols, line numbering, equipment numbering, equipment identification, abbreviations and understanding and section types of drawings.



During the course, participants will learn to interpret P&IDs and identify valve types, valve fittings, equipments, vessels, pumps, heat exchangers, equipments, control and safety systems distributed control systems (DCS), safety instrument system (SIS), instrument symbols and instrument signal lines; and interpreting P&IDs in control and safety systems covering the pressure, temperature and flow instruments.

Course Objectives

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

- Apply and gain an in-depth knowledge on reading of piping and instrument drawing
- Discuss the introduction to standards and regulations related to P&ID covering ANSI, ASME, ASTM, API, CSA, ISA and OSHA
- Explain preliminary engineering drawings including drawing in project lifestyle, document control, block flow diagram (BFD), process flow diagram (PFD) and PFD symbols
- Illustrate piping and instrumentation diagrams, P&ID symbols, line numbering, equipment numbering, equipment identification, abbreviations and understanding and section types of drawings
- Interpret P&IDs and identify valve types, valve fittings, equipments, vessels, pumps, heat exchangers, equipments, control and safety systems distributed control systems (DCS), safety instrument system (SIS), instrument symbols and instrument signal lines
- Interpret P&IDs in control and safety systems covering the pressure, temperature and flow instruments

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 reading of piping and instrument drawing 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.

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: -

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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.

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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 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. Ahmed Abozeid is a **Senior Electrical Engineer** with over **25 years** of **Onshore & Offshore** experience within the **Oil & Gas, Refinery, Petrochemical** and **Power** industries. His wide expertise covers **HV Cable Design, Cable Splicing & Termination, Cable Jointing Techniques, High Voltage Electrical Safety, HV/MV Cable Splicing, High Voltage Circuit Breaker Inspection & Repair, High Voltage Power System Safe Operation, High Voltage Safety, High**

Voltage Transformers, Safe Operation of High Voltage & Low Voltage Power Systems, Electric Distribution System Equipment, Practical Troubleshooting of Electrical Equipment & Control Circuits, Electrical & Control System Testing & Commissioning, LV/MV/HV Circuit Breakers Inspection & Maintenance, Electrical Power Substation Maintenance, Practical High Voltage Safety Operating Procedures, Modern Power System Protective Relaying, Electrical & Control System Testing, Design, Commissioning, Operation and Maintenance of Switchgears, Transformers, Substations, Medium & High Voltage Equipment and Circuit Breakers, Electrical Motors & Variable Speed Drives, Motor Speed Control, Power Electronic Converters, AC Converters Section, Electromagnetic Compatibility (EMC), Motor Failure Analysis & Testing, Machinery Fault Diagnosis, Bearing Failure Analysis Process Control & Instrumentation, Process Control Measurements, Control System Commissioning & Start-Up, Control System & Monitoring, Power Station Control System, Instrumentation Devices, Process Control & Automation, PID Controller, Distributed Control Systems (DCS), Programmable Logic Controllers (PLC), ABB PLC & DCS System, Gas Analyzers, Simulation Testing, Load Flow, Short Circuit, Smart Grid, Vibration Sensors, Cable Installation & Commissioning, Calibration Commissioning and Site Filter Controller. Further, he is also well-versed in **Fundamentals of Electricity, Electrical Standards, Electrical Power, PLC, Electrical Wiring, Machines, Transformers, Motors, Power Stations, Electro-Mechanical Systems, Automation & Control Systems, Voltage Distribution, Power Distribution, Filters, Automation System, Electrical Variable Speed Drives, Power Systems, Power Generation, Power Transformers, Diesel Generators, Power Stations, Uninterruptible Power Systems (UPS), Battery Chargers and AC & DC Transmission.** He is currently the **Project Manager** wherein he manages, plans and implements projects across different lines of business.

Mr. Ahmed worked as the **Electrical Manager, Assistant General Technical Manager, Electronics & Instruments Head, Electrical Power & Machine Expert, Electrical Process Leader, Team Leader, Electrical Team Leader, Electronics & Instruments Maintenance Superintendent, Engineering Supervisor, Technical Instructor** and **Instructor/Trainer** from various companies such as the Lafarge Nigeria, Egyptian Cement Company, ECC Training Center, Alrajhi Construction & Building Company and Ameria Cement Company, just to name a few.

Mr. Ahmed has a **Bachelor** degree in **Electrical Engineering**. Further, he is a **Certified Instructor/Trainer** and has delivered numerous trainings, seminars, courses, workshops 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 Standards & Regulations related to P&ID (ANSI, ASME, ASTM, API, CSA, ISA, OSHA)
0930 – 0945	Break
0945 – 1100	Preliminary Engineering Drawings Drawings in Project Lifecycle • Document Control
1100 – 1215	Preliminary Engineering Drawings (cont'd) Block Flow Diagram (BFD) • Process Flow Diagram (PFD)
1215 – 1230	Break
1230 – 1420	Preliminary Engineering Drawings (cont'd) PFD Symbols
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	Piping & Instrumentation Diagrams Piping and Instrumentation Diagram (P&ID) • P&ID Symbols • Line Numbering
0930 – 0945	Break
0945 – 1100	Piping & Instrumentation Diagrams (cont'd) Equipment Numbering • Equipment Identification • Abbreviations
1100 – 1215	Piping & Instrumentation Diagrams (cont'd) Abbreviations & Understanding
1215 – 1230	Break
1230 – 1420	Piping & Instrumentation Diagrams (cont'd) Section Types of Drawings
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Interpreting P&IDs Valves Valve Types • Valve Identification • Valve Fittings
0930 – 0945	Break
0945 – 1100	Interpreting P&IDs Equipment • Vessels • Pumps
1100 – 1215	Interpreting P&IDs (cont'd) Heat Exchangers • Compressors
1215 – 1230	Break
1230 – 1420	Interpreting P&IDs (cont'd) Equipment Identification
1420 – 1430	Recap
1430	Lunch & End of Day Three





Day 4

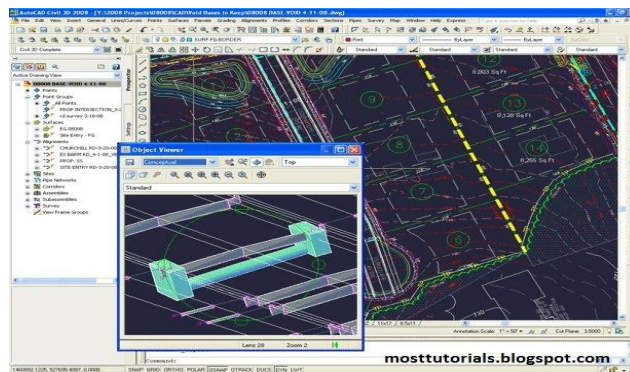
0730 – 0930	Interpreting P&IDs (dcont'd) Control & Safety Systems Distributed Control Systems (DCS)
0930 – 0945	Break
0945 – 1100	Interpreting P&IDs (cont'd) Safety Instrument System (SIS)
1100 – 1215	Interpreting P&IDs (cont'd) Instrument Symbols
1215 – 1230	Break
1230 – 1420	Interpreting P&IDs (cont'd) Instrument Signal Lines
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 – 0930	Interpreting P&IDs – Control & Safety Systems Pressure Instruments • Temperature Instruments • Flow Instruments
0930 – 0945	Break
0945 – 1100	Group Case Study
1100 – 1215	Group Case Study (cont'd)
1215 – 1230	Break
1230 – 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” simulator.



AutoCAD Software

Course Coordinator

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

