COURSE OVERVIEW GE0051
Mechanical Blue Print Reading

Course Title
Mechanical Blue Print Reading

Course Date/Venue
Session 1: February 23-27, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: April 25-29, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
GE0051

Course Duration/Credits
Five days/3.0 CEUs/30.0 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 overview of blue print reading. It covers the basic features of construction blueprints; the various types of blueprints; the lines, symbols, and abbreviations that are commonly found in blueprints; the proper care for blueprints; the plant layout disciplines and priorities in design drafting; the orthographic projection and isometric projection; the linework and symbology; the mechanical drawings, structural, piping and instrumentation blue prints including title blocks; the revisions, metric, imperial scales and dimensioning; and the types of diagrams and terminology used in plant design drawings.

During this interactive course, participants will learn the equipment location diagrams, system diagrams and flow diagram symbols; the tanks, pumps, valves, actuators and heat exchangers; reading diagram symbols, block diagrams and flow diagrams; drafting and interpretation of process flow diagram; developing process and instrumentation diagram; the piping and instrumentation functions and piping arrangements; the isometrics, piping documentation, specifications and instrumentation specs; the fittings and valve functions, dimensioning, drafting isometrics and bills of materials; and the equipment sizing and selection, blue print interpretation and blue prints documentations.

Course Objectives

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

- Apply systematic techniques on blue print reading
- Discuss the basic features of construction blueprints
- Describe various types of blueprints
- Identify lines, symbols, and abbreviations that are commonly found in blueprints
- Explain how to properly care for blueprints
- Identify plant layout disciplines and define priorities in design drafting
- Recognize orthographic projection and isometric projection as well as linework and symbology
- Illustrate mechanical drawings, structural, piping and instrumentation blue prints including title blocks
- Determine revisions, metric, imperial scales and dimensioning
- Interpret design drawing and identify the types of diagrams and terminology used in plant design drawings
- Illustrate equipment location diagrams, system diagrams and flow diagram symbols
- Discuss tanks, pumps, valves, actuators and heat exchangers
- Read diagram symbols, block diagrams and flow diagrams
- Draft and interpret examples and describe process flow diagram
- Develop process and instrumentation diagram and identify the piping and instrumentation functions and piping arrangements
- Review isometrics, piping documentation, specifications and instrumentation specs
- Recognize fittings and valve functions, dimensioning, drafting isometrics and bills of materials
- Carryout equipment sizing and selection, blue print interpretation and blue prints documentations

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 of blue print reading 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 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:

Dr. Tony Dimitry, PhD, MSc, BSc, is a **Senior Mechanical Engineer** with over **30 years** of industrial experience. His expertise covers **HVAC & Refrigeration Systems**, **Engineering Drawings, Codes & Standards**, **P&ID Reading, Interpretation & Developing**, **Process Equipment**, **Plumbing Network System**, **Piping System**, **Vibration Analysis**, **Heat Exchanger**, **Gas Turbine**, **Siemens Steam Turbine Maintenance**, **Electromechanical Maintenance**, **Machinery Alignment**, **Lubrication Technology**, **Blower & Fan**, **Shaft Repair**, **Control Valve & Actuator**, **Safety Relief Valves**, **Pipelines**, **Piping Vibration Analysis**, **Pressure Vessels**, **Dry Gas Seal**, **Process Equipment**, **Diesel Engine & Crane Maintenance**, **Maintenance Management** (**Preventive**, **Predictive**, **Breakdown**), **Reliability Management**, **Condition-Based Monitoring**, **Rotating Equipment**, **Tanks & Tank Farms**, **Pneumatic System**, **Static Equipment**, **Failure Analysis**, **FMEA**, **Corrosion**, **Metallurgy**, Planning, Scheduling, Cost Control, Preventive and Predictive Maintenance. Currently, he is the Maintenance Manager of the PPC Incorporation wherein he is responsible for the maintenance and upgrade of all plant components, monitoring the thermal stresses and the remaining life of steam pipes, turbine casing, mills, fans and pumps. He is in-charge of the metallurgical failure analysis and the usage of fracture mechanics for determining crack propagation in impellers of turbines, assessing all alterations and developments for upgrading the plant.

During his career life, Dr. Dimitry was a **Senior Engineer** in **Chloride Silent** (**UK**) wherein he was responsible for the mechanical, thermal and electrical modelling of battery problems for electric vehicles and satellites as well as an **Operations Engineer** of the **National Nuclear Corporation** (**UK**) wherein he was responsible for the optimization of the plant. Prior to this, he was a **Professor** at the **Technical University of Crete** and an Assistant **Professor** of the **University of Manchester** (**UK**).

Dr. Dimitry has **PhD**, **Master** and **Bachelor** degrees in **Mechanical Engineering** from the **University of Manchester**, **UK**. Further, he is an active member of the American Society of Mechanical Engineers (**ASME**) and Institution of Mechanical Engineers (**IMechE**).

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 – 0900	***Plant Layout Disciplines***
0900 – 0930	***Defining Priorities in Design Drafting***
0930 – 0945	*Break*
0945 – 1040	***Orthographic Projection***
1040 – 1135	***Isometric Projection***
1135 - 1230	***Linework and Symbology***
1230 – 1245	*Break*
1245 – 1315	***Mechanical Drawings***
1315 – 1345	***Structural, Piping & Instrumentation Blue Prints***
1345 – 1420	***Title Blocks***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Revisions***
0830 – 0930	***Metric & Imperial Scales***
0930 – 0945	*Break*
0945 – 1040	***Dimensioning***
1040 – 1135	***Types of Diagrams***
1135 - 1230	***Design Drawing Interpretation***
1230 – 1245	*Break*
1245 – 1315	***Terminology Used in Plant Design Drawings***
1315 – 1345	***Equipment Location Diagrams***
1345 – 1420	***System Diagrams***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Flow Diagram Symbols***
0830 – 0930	***Tanks, Pumps & Valves***
0930 – 0945	*Break*
0945 – 1040	***Actuators***
1040 – 1135	***Heat Exchangers***
1135 - 1230	***Reading Diagram Symbols***
1230 – 1245	*Break*

1245 – 1315	***Block Diagrams***
1315 – 1345	***Flow Diagrams***
1345 – 1420	***Drafting & Interpretation Examples***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

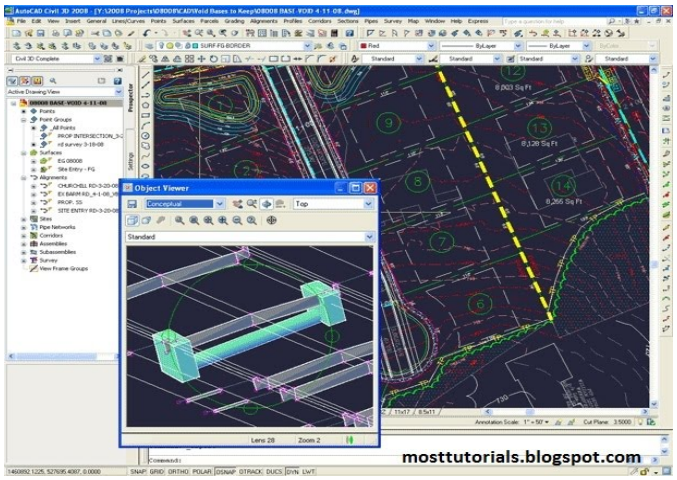
0730 – 0830	***Process Flow Diagram***
0830 – 0930	***Development of Process & Instrumentation Diagram (P&ID)***
0930 – 0945	*Break*
0945 – 1040	***Piping & Instrumentation Functions***
1040 – 1135	***Piping Arrangements***
1135 - 1230	***Isometrics***
1230 – 1245	*Break*
1245 – 1315	***Piping Documentation***
1315 – 1345	***Specifications***
1345 – 1420	***Instrumentation Specs***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: ***Thursday, 09th of August 2018***

0730 – 0830	***Fittings & Valve Functions***
0830 – 0930	***Dimensioning & Drafting Isometrics***
0930 – 0945	*Break*
0945 – 1040	***Bills of Material***
1040 – 1135	***Equipment Sizing & Selection***
1135 - 1230	***Blue Print Interpretation***
1230 – 1245	*Break*
1245 -1345	***Blue Prints Documentation***
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

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