COURSE OVERVIEW GE0002
Engineering Drawings, Codes and Standards

Course Title
Engineering Drawings, Codes and Standards

Course Date/Venue
October 19-23, 2025/Boardroom 1, Elite Byblos Hotel
Al Barsha, Sheikh Zayed Road, Dubai, UAE

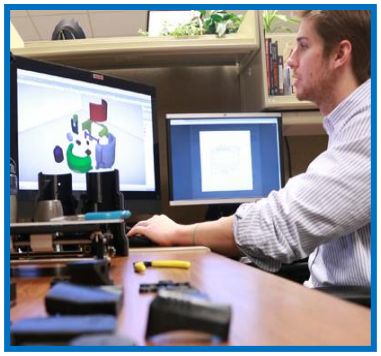
Course Reference
GE0002

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

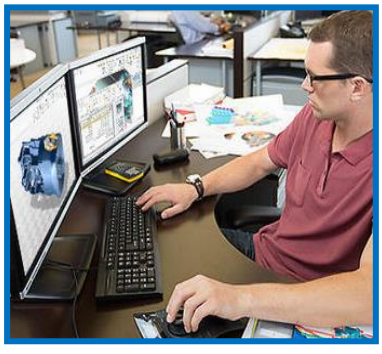
Course Description

This practical and highly-interactive course includes various 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 Engineering Drawings, Codes and Standards. It covers the types of engineering drawings and the role of drawings in design and manufacturing; the drawing tools and equipment, lines, lettering, dimensioning, geometric constructions and orthographic projections; the difference isometric, oblique, perspective drawings and the techniques for creating isometric views; the purpose of sectional views, types of sections, hatching techniques and standards and applications of sectional views in complex assemblies; the auxiliary views, dimensioning and tolerancing and surface finish and texture symbols; and the components of assembly drawings, techniques for creating assembly drawings and applications in manufacturing and maintenance.



During this interactive course, participants will learn the engineering codes and standards covering ISO, ASME, ANSI, DIN and other national standards; the importance of compliance with codes and standards and the auditing and quality control in drawing practices; the mechanical engineering drawings, civil engineering drawings, electrical and electronics engineering drawings and architectural drawings; the piping and instrumentation diagrams (P&ID) and structural engineering drawings; reading complex drawings and identifying errors and inconsistencies, symbols and notations; the importance of collaboration in engineering projects; the document control and version management; and the product lifecycle management tools and best practices for documentation.



Course Objectives

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

- Apply and gain an in-depth knowledge on engineering drawings, codes and standards
- Identify the types of engineering drawings and the role of drawings in design and manufacturing
- Recognize drawing tools and equipment, lines, lettering and dimensioning, geometric constructions and orthographic projections
- Differentiate isometric, oblique and perspective drawings and apply techniques for creating isometric views
- Explain the purpose of sectional views, types of sections, hatching techniques and standards and applications of sectional views in complex assemblies
- Recognize auxiliary views, dimensioning, tolerancing, surface finish and texture symbols
- Identify the components of assembly drawings, techniques for creating assembly drawings and applications in manufacturing and maintenance
- Discuss engineering codes and standards covering ISO, ASME, ANSI, DIN and other national standards
- Explain the importance of compliance with codes and standards and apply auditing and quality control in drawing practices
- Illustrate mechanical engineering drawings, civil engineering drawings, electrical and electronics engineering drawings and architectural drawings
- Describe piping and instrumentation diagrams (P&ID) and structural engineering drawings
- Read complex drawings, identify errors and inconsistencies and interpret symbols and notations
- Discuss the importance of collaboration in engineering projects and carryout document control and version management, product lifecycle management tools and best practices for documentation

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 provides an overview of all significant aspects and considerations of engineering drawings, codes and standards for mechanical engineers, civil engineer, electrical engineers, industrial engineers, draftsmen/drafters, architects and designers, quality control inspectors, project managers, manufacturing professionals, regulatory authorities and inspectors and other technical staff.

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 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. Dimitry Rovas, CEng, MSc, PMI-PMP, is a **Senior Engineer** with extensive industrial experience in **Oil**, **Gas**, **Power** and **Utilities** industries. His expertise include **Oil & Gas Trading**, **Pricing & Economic** Framework, **Crude Oil Market Trading**, **Market** Strategies, **Crude Oil Pricing** System, **Linear Programming**, **Data Analysis** Techniques, **Detailed Engineering Drawings**, **Codes & Standards**, **GPS & Data Capture**, **Advanced Design** Techniques, **P&ID Reading**, **Interpretation & Developing**, **Project Management Economics** Program, **Pump** Technology, **Pump** Selection & Installation, **Centrifugal Pumps & Troubleshooting**, **Reciprocating & Centrifugal Compressors**, **Compressor** Control & Protection, **Gas & Steam Turbines**, **Turbine** Operations, **Gas Turbine** Technology, **Valves**, **Bearings & Lubrication**, Advanced **Machinery Dynamics**, **Rubber Compounding**, **Elastomers**, **Thermoplastic**, **Industrial Rubber Products**, **Rubber** Manufacturing Systems, **Heat Transfer**, **Vulcanization Methods**, **Process Plant Shutdown & Turnaround**, **Maintenance Optimization & Best Practices**, **Maintenance Auditing & Benchmarking**, **Reliability** Management, **Rotating Equipment**, **Energy Conservation**, **Energy Loss Management** in Electricity Distribution Systems, **Energy Saving**, **Thermal Power Plant** Management, **Thermal Power Plant** Operation & Maintenance, **Heat Transfer**, **Machine Design**, **Fluid Mechanics**, **Heating & Cooling Systems**, **Heat Insulation Systems**, **Heat Exchanger & Cooling Towers**, **Mechanical Erection**, **Heavy Rotating Equipment**, Material Unloading & Storage, Commissioning & Start-Up. Further, he is also well-versed in MS project & AutoCAD, EPC Power Plant, Power Generation, Combined Cycle Powerplant, Leadership & Mentoring, Project Management, Strategic Planning/Analysis, Construction Management, Team Formation, Relationship Building, Communication, Reporting and Six Sigma. He is currently the **Project Manager** wherein he is managing, directing and controlling all activities and functions associated with the domestic heating/cooling facilities projects.

During his life career, Mr. Rovas has gained his practical and field experience through his various significant positions and dedication as the **EPC Project Manager**, **Field Engineer**, **Preventive Maintenance Engineer**, **Researcher**, **Instructor/Trainer**, **Telecom Consultant** and **Consultant** from various companies such as the Podaras Engineering Studies, Metka and Diadikasia, S.A., **Hellenic Petroleum Oil Refinery** and COSMOTE.

Mr. Rovas is a **Chartered Engineer** of the **Technical Chamber** of **Greece**. Further, he has **Master** degrees in **Mechanical Engineering** and **Energy Production & Management** from the **National Technical University of Athens**. Moreover, he is a **Certified Instructor/Trainer**, a **Certified Project Management Professional** (**PMP**), a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and a **Certified Six Sigma Black Belt**. He is an active member of Project Management Institute (**PMI**), Technical Chamber of Greece and Body of Certified Energy Auditors and has further delivered numerous trainings, seminars, courses, workshops and conferences internationally.

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 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.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Sunday, 19th of October 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Engineering Drawings*** *Definition & Importance of Engineering Drawings • Types of Engineering Drawings (Mechanical, Civil, Electrical, etc.) • Role of Drawings in Design & Manufacturing • Overview of Drawing Standards (ISO, ANSI, ASME)*
0930 – 0945	*Break*
0945 – 1030	***Drawing Tools & Equipment*** *Traditional Tools: T-Squares, Compasses, Protractors • Modern Tools: CAD Software (AutoCAD, SolidWorks) • Scales & their Applications • Drawing Papers & Formats (A0, A1, A2, etc.)*
1030 – 1130	***Lines, Lettering, & Dimensioning*** *Types of Lines (Continuous, Dashed, Phantom, Etc.) • Lettering Standards & Guidelines • Dimensioning Principles & Techniques • Common Dimensioning Errors & How to Avoid Them*
1130 – 1215	***Geometric Constructions*** *Basic Geometric Shapes & their Constructions • Tangents, Arcs, & Circles • Polygons & their Constructions • Applications of Geometric Constructions in Engineering*
1215 – 1230	*Break*

1230 – 1330	***Orthographic Projections*** *Principles of Orthographic Projection • First-Angle versus Third-Angle Projection • Multiview Drawings & their Applications • Exercises in Creating Orthographic Projections*
1330 – 1420	***Isometric & Pictorial Drawings*** *Introduction to Isometric Drawings • Difference Between Isometric, Oblique, & Perspective Drawings • Techniques for Creating Isometric Views • Applications of Pictorial Drawings in Engineering*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2: ***Monday, 20th of October 2025***

0730 – 0830	***Sectional Views*** *Purpose of Sectional Views • Types of Sections (Full, Half, Offset, etc.) • Hatching Techniques & Standards • Applications of Sectional Views in Complex Assemblies*
0830 – 0930	***Auxiliary Views*** *Definition & Purpose of Auxiliary Views • Types of Auxiliary Views (Primary, Secondary) • Techniques for Drawing Auxiliary Views • Applications in Showing True Shapes of Inclined Surfaces*
0930 – 0945	*Break*
0945 – 1100	***Dimensioning & Tolerancing*** *Importance of Tolerances in Engineering Drawings • Types of Tolerances (Bilateral, Unilateral) • Geometric Dimensioning & Tolerancing (GD&T) Basics • Common Symbols & their Meanings in GD&T*
1100 – 1215	***Surface Finish & Texture Symbols*** *Importance of Surface Finish in Manufacturing • Surface Texture Symbols & their Interpretation • Applications of Surface Finish Specifications • Relationship Between Surface Finish & Tolerances*
1215 – 1230	*Break*
1230 – 1330	***Assembly Drawings*** *Purpose of Assembly Drawings • Components of Assembly Drawings (Bill of Materials, Exploded Views) • Techniques for Creating Assembly Drawings • Applications in Manufacturing & Maintenance*
1330 – 1420	***Detail Drawings*** *Purpose of Detail Drawings • Components of Detail Drawings (Dimensions, Notes, etc.) • Techniques for Creating Detail Drawings • Applications in Fabrication & Construction*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 21st of October 2025

0730 – 0830	***Basics of Engineering Codes & Standards*** *Definition & Importance of Codes & Standards • Major Organizations (ISO, ANSI, ASME, DIN, etc.) • Overview of Common Codes & Standards • Role of Codes in Ensuring Safety & Quality*
0830 – 0930	***ISO Standards for Engineering Drawings*** *Overview of ISO 128 (Technical Drawings) • ISO 2768 (General Tolerances) • ISO 1302 (Surface Texture) • Applications of ISO Standards in Global Engineering*
0930 – 0945	*Break*
0945 – 1100	***ASME Standards for Engineering Drawings*** *Overview of ASME Y14.5 (Dimensioning & Tolerancing) • ASME Y14.100 (Engineering Drawing Practices) • ASME Y14.34 (Parts Lists & Data Sets) • Applications of ASME Standards in The U.S. & Globally*
1100 – 1215	***ANSI Standards for Engineering Drawings*** *Overview of ANSI Y14 Series • ANSI Y14.1 (Drawing Sheet Size & Format) • ANSI Y14.2 (Line Conventions & Lettering) • Applications of ANSI Standards in Engineering*
1215 – 1230	*Break*
1230 – 1330	***DIN & Other National Standards*** *Overview of DIN Standards (Germany) • Comparison of DIN With ISO & ASME • Other National Standards (BS, JIS, etc.) • Applications in International Projects*
1330 – 1420	***Compliance & Certification*** *Importance of Compliance with Codes & Standards • Certification Processes for Engineering Drawings • Auditing & Quality Control in Drawing Practices • Case Studies On Non-Compliance & Its Consequences*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 22nd of October 2025

0730 – 0830	***Mechanical Engineering Drawings*** *Overview of Mechanical Drawings • Applications in Machine Design & Manufacturing • Common Components (Gears, Bearings, Shafts) • Case Studies of Mechanical Assemblies*
0830 – 0930	***Civil Engineering Drawings*** *Overview of Civil Engineering Drawings • Applications in Construction & Infrastructure • Common Components (Beams, Columns, Foundations) • Case Studies of Civil Engineering Projects*
0930 – 0945	*Break*
0945 – 1100	***Electrical & Electronics Engineering Drawings*** *Overview of Electrical Drawings • Applications in Circuit Design & PCB Layout • Common Symbols & Conventions • Case Studies of Electrical Systems*
1100 – 1215	***Architectural Drawings*** *Overview of Architectural Drawings • Applications in Building Design & Construction • Common Components (Floor Plans, Elevations, Sections) • Case Studies of Architectural Projects*

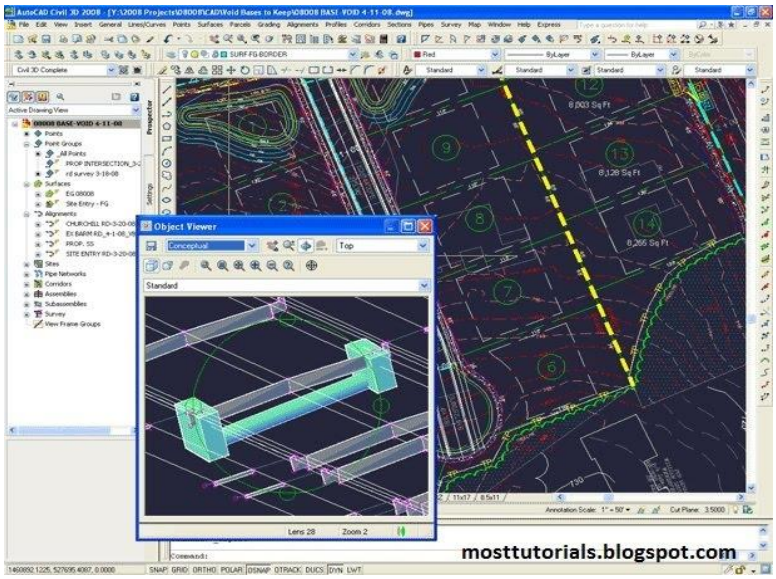
1215 – 1230	*Break*
1230 – 1330	***Piping & Instrumentation Diagrams (P&ID)*** *Overview of P&ID Drawings • Applications in Process Engineering • Common Symbols & Conventions • Case Studies of P&ID in Industrial Plants*
1330 – 1420	***Structural Engineering Drawings*** *Overview of Structural Drawings • Applications in Building & Bridge Design • Common Components (Trusses, Frames, Connections) • Case Studies of Structural Engineering Projects*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today & Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

Day 5: ***Thursday, 23rd of October 2025***

0730 – 0830	***Hands-On Drawing Exercises*** *Creating Orthographic & Isometric Drawings • Dimensioning & Tolerancing Exercises • Sectional & Auxiliary View Exercises • Assembly & Detail Drawing Exercises*
0830 - 0930	***CAD Software Training*** *Introduction to CAD Software (Autocad, Solidworks) • Creating 2D & 3D Models • Applying GD&T in CAD • Exporting & Sharing CAD Files*
0930 – 0945	*Break*
0945 – 1035	***Reading & Interpreting Drawings*** *Techniques for Reading Complex Drawings • Identifying Errors & Inconsistencies • Interpreting Symbols & Notations • Practical Exercises in Drawing Interpretation*
1035 – 1125	***Collaboration & Documentation*** *Importance of Collaboration in Engineering Projects • Document Control & Version Management • Using PLM (Product Lifecycle Management) Tools • Best Practices for Documentation*
1125 - 1215	***Future Trends in Engineering Drawings*** *Digital Transformation in Engineering Drawings • Role of AI & Machine Learning in CAD • Augmented & Virtual Reality in Engineering Design • Sustainability & Green Engineering in Drawings*
1215 – 1230	*Break*
1230 - 1330	***Final Project & Assessment*** *Group Project: Creating A Complete Set of Engineering Drawings • Presentation & Review of Final Projects • Feedback & Improvement Suggestions • Course Assessment & Certification*
1330 – 1345	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about t Topics that were Covered During the Course*
1345 – 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 state-of-the-art simulator "AutoCAD".



AutoCAD 2024

Course Coordinator

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