



COURSE OVERVIEW GE0048 Design General Specification

Course Title

Design General Specification

Course Date/Venue

December 09-13, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference

GE0048

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 the “MS Excel” applications.

This course is designed to provide delegates with a detailed and up-to-date overview of Design General Specification. It covers the concept, importance and application of design general specifications; the regulatory framework and standards; the safety and environmental considerations and guidelines for material selection in different parts of the refinery, considering operational, environmental and safety factors; the basic principles of process design, including flow diagrams, mass and heat balances and system integration; and the piping and instrumentation diagrams (P&ID), equipment design and specifications, instrumentation.



Further, the course will also discuss the control systems and electrical systems design; the civil and structural engineering, corrosion and materials engineering and utility systems design; the waste management and environmental systems; the design and specification for offsite facilities, including storage, loading/unloading facilities and tank farms; integrating renewable energy sources into refinery operations; the reliability and maintenance engineering; and the specifications for fire protection, safety systems and emergency response measures.



During this interactive course, participants will learn the project planning and scheduling, cost estimation,

budgeting and quality assurance and control; the contract management, risk management and designing for sustainability, including energy efficiency, resource conservation and sustainable materials selection; the emerging technologies in refining, digitalization and smart refinery concepts; and the innovation in material science and modular design and construction

Course Objectives

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

- Apply and gain an in-depth knowledge on design general specification
- Discuss the concept, importance and application of design general specifications including the regulatory framework and standards
- Explain the safety and environmental considerations and guidelines for material selection in different parts of the refinery, considering operational, environmental and safety factors
- Discuss the basic principles of process design, including flow diagrams, mass and heat balances and system integration
- Recognize piping and instrumentation diagrams (P&ID), equipment design and specifications, instrumentation and control systems and electrical systems design
- Discuss civil and structural engineering, corrosion and materials engineering and utility systems design
- Recognize waste management and environmental systems as well as the design and specification for offsite facilities, including storage, loading/unloading facilities and tank farms
- Integrate renewable energy sources into refinery operations and apply reliability and maintenance engineering
- Explain the specifications for fire protection, safety systems and emergency response measures
- Carryout project planning and scheduling, cost estimation, budgeting and quality assurance and control
- Employ contract management, risk management and designing for sustainability, including energy efficiency, resource conservation and sustainable materials selection
- Identify the emerging technologies in refining, digitalization and smart refinery concepts, innovation in material science and modular design and construction

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, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of design general specification for planning engineers, design engineers, civil engineers, construction engineers, material engineers, structural engineers, architects and contractors. Further, commercial managers, estimation managers, section heads, supervisors and refineries/process plant consultants will gain an excellent knowledge from the operational aspects of this course.

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 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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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.

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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.



Course Instructor

This course will be conducted by the following instructor. However, we have the right to change the course instructor 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.





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: Monday, 09th December 2024

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Design General Specifications: The Concept, Importance & Application of Design General Specifications in Refinery Projects
0930 – 0945	Break
0945 – 1100	Regulatory Framework & Standards: Overview of Regulatory Frameworks, Including Local & International Standards Applicable to ADNOC Projects
1100 – 1215	Safety & Environmental Considerations: Key Safety & Environmental Standards, Practices & Design Considerations in Refinery Operations
1215 – 1230	Break
1230 – 1330	Material Selection & Specifications: Guidelines for Material Selection in Different Parts of the Refinery, Considering Operational, Environmental & Safety Factors
1330 – 1420	Process Design Considerations: Basic Principles of Process Design, including Flow Diagrams, Mass & Heat Balances & System Integration
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2: Tuesday, 10th December 2024

0730 – 0830	Piping & Instrumentation Diagrams (P&ID): Development & Interpretation of P&IDs, Including Symbols, Nomenclature & Best Practices
0830 – 0930	Equipment Design & Specifications: Detailed Specifications for Key Refinery Equipment such as Reactors, Distillation Columns & Heat Exchangers
0930 – 0945	Break
0945 – 1100	Instrumentation & Control Systems: Specifications for Instrumentation & Control Systems to Ensure Operational Safety & Efficiency
1100 – 1215	Electrical Systems Design: Standards & Specifications for Electrical Systems, including Power Distribution & Grounding Systems
1215 – 1230	Break
1230 – 1330	Civil & Structural Engineering: Guidelines for Civil & Structural Design, including Foundations, Structures & Support Systems
1330 – 1420	Corrosion & Materials Engineering: Understanding Corrosion Mechanisms, Material Degradation & Selection of Corrosion-Resistant Materials
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3: Wednesday, 11th December 2024

0730 – 0830	Utility Systems Design: Specifications for Design & Operation of Utility Systems, Including Water, Steam, Air & Fuel Systems
0830 – 0930	Waste Management & Environmental Systems: Design Considerations for Effluent Treatment, Waste Management & Emissions Control Systems
0930 – 0945	Break
0945 – 1100	Offsite & Ancillary Facilities: Design & Specification for Offsite Facilities, Including Storage, Loading/Unloading Facilities & Tank Farms
1100 – 1215	Integration of Renewable Energy Sources: Guidelines for Integrating Renewable Energy Sources into Refinery Operations





1215 - 1230	Break
1230 - 1330	Reliability & Maintenance Engineering: Design for Reliability & Maintainability, including Accessibility for Maintenance & Inspection
1330 - 1420	Fire Protection & Safety Systems: Specifications for Fire Protection, Safety Systems & Emergency Response Measures
1420 - 1430	Recap
1430	Lunch & End of Day Three

Day 4: Thursday, 12th December 2024

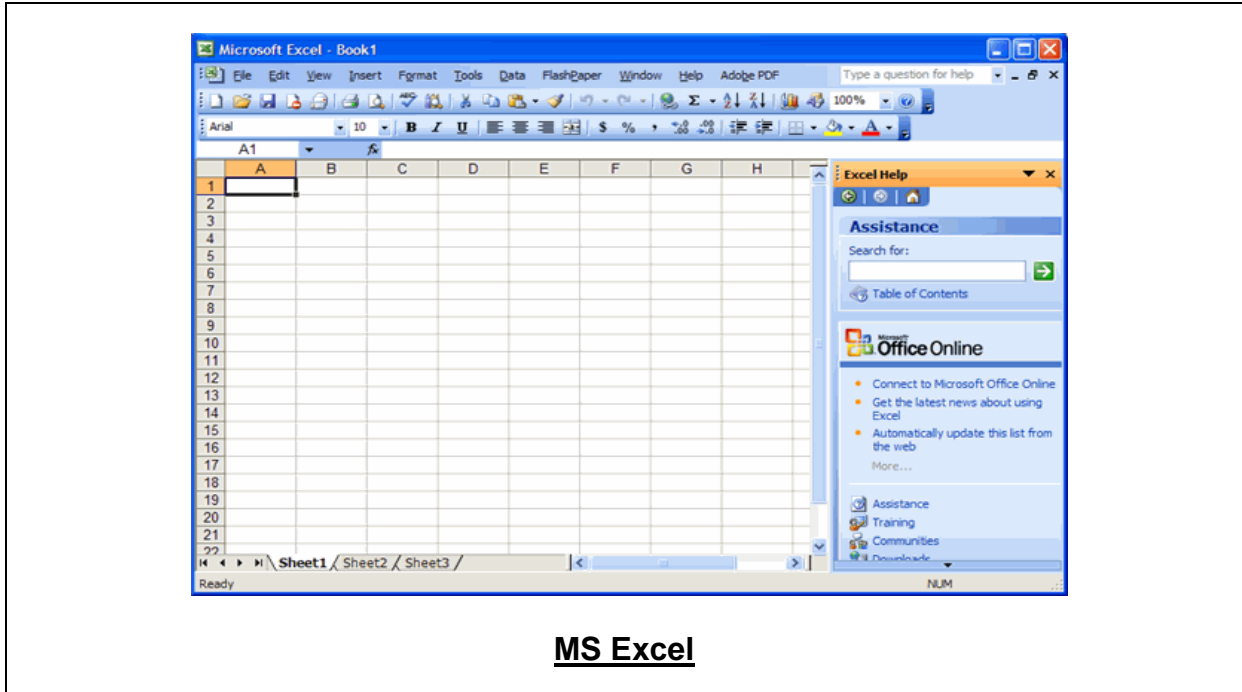
0730 - 0830	Project Planning & Scheduling: Key Principles in Project Planning, Scheduling & Resource Allocation for Design & Construction Phases
0830 - 0930	Cost Estimation & Budgeting: Techniques for Accurate Cost Estimation, Budgeting & Financial Control in Refinery Projects
0930 - 0945	Break
0945 - 1100	Quality Assurance & Control: Implementing Quality Assurance & Control Measures Throughout the Design & Construction Phases
1100 - 1215	Contract Management: Guidelines for Contract Management, including Procurement, Contractor Selection & Performance Evaluation
1215 - 1230	Break
1230 - 1330	Risk Management: Identifying, Assessing & Mitigating Risks Associated with Refinery Design & Construction
1330 - 1420	Sustainability & Energy Efficiency: Designing for Sustainability, including Energy Efficiency, Resource Conservation & Sustainable Materials Selection
1420 - 1430	Recap
1430	Lunch & End of Day Four

Day 5: Friday, 13th December 2024

0730 - 0830	Emerging Technologies in Refining: Overview of Emerging Technologies & Their Potential Impact on Refinery Design & Operations
0830 - 0930	Digitalization & Smart Refinery Concepts: Implementing Digital Technologies, Including AI & Data Analytics, in Refinery Operations
0930 - 0945	Break
0945 - 1100	Innovation in Material Science: Advances in Material Science & Their Applications in Refining Processes & Equipment
1100 - 1215	Modular Design & Construction: Advantages & Challenges of Modular Design & Construction in Refinery Projects
1215 - 1230	Break
1230 - 1345	Future Trends & Challenges in Refinery Design: Discussion on Future Trends, Challenges & Opportunities in Refinery Design & Operation
1345 - 1400	Course Conclusion
1400 - 1415	POST-TEST
1415 - 1430	Presentation of Course Certificates
1430	Lunch & End of Course

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 “MS-Excel” application.



Course Coordinator

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