COURSE OVERVIEW ME0307(SA1)
Steel Manufacturing Process

Course Title
Steel Manufacturing Process

Course Date/Venue
September 06-10, 2025/Safir Meeting Room, Divan Istanbul, Turkey

Course Reference
ME0307(SA1)

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

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Steel Manufacturing Process. It covers the product and process characteristics, quality management and hot strip quality parameters; measuring quality parameters in the rolling mill; applying statistical methods for measurement evaluation and data storage through quality control; scheduling rolling programs and rolling campaigns; the defect catalogue to be covered with quality management; the coil box operations, maintenance and automation; and the thickness profile, strip contour and flatness.

During this interactive course, participants will learn the mechanical design, controller design and profile control flatness control (PCFC); the thermal crown, roll wear, load distribution and preset and adaption algorithm; the furnaces operation, maintenance and automation; the roughing mill and edger operations, secondary descaler and finishing mill; the pass scheduling, maintenance and automation; the down coiler operation, maintenance and automation; the measurement of coil face profile and multivariable coiling control; the control system and media systems; and operating, maintaining and automating information on hydraulic, pneumatic and lubrication systems.

Course Objectives

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

- Apply and gain an in-depth knowledge on steel manufacturing process
- Gain practical knowledge on hot rolling process and working with equipment in a hot strip mill
- Increase awareness on quality and quality defects as well as reductions in reactive errors
- Gain effective understanding on rolling philosophy and equipment integration
- Describe product and process characteristics, quality management and hot strip quality parameters
- Measure quality parameters in the rolling mill and apply statistical methods for measurement evaluation and data storage through quality control
- Schedule rolling programs and rolling campaigns and review defect catalogue to be covered with quality management
- Carryout coil box operations, maintenance and automation
- Define thickness profile, strip contour and flatness
- Illustrate mechanical design, controller design, profile control flatness control (PCFC), thermal crown, roll wear, load distribution and preset and adaption algorithm
- Employ furnaces operation, maintenance and automation
- Apply roughing mill and edger operations, secondary descaler and finishing mill, pass scheduling, maintenance and automation
- Carryout down coiler operation, maintenance and automation and measurement of coil face profile and multivariable coiling control
- Recognize control system and media systems as well as operate, maintain and automate information on hydraulic, pneumatic and lubrication systems

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 steel manufacturing process for production supervisors and managers, plant engineers, quality control personnel and those who are involved in steel manufacturing process, whether they are new to the industry or experienced professionals.

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

Haward's 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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

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:

Mr. George Poulos, MBA, MSc, BSc, CEng, is a **Senior Naval & Welding Engineer** with over **45 years** of extensive experience within the **Oil & Gas, Petrochemical, Refinery, Construction, Aircraft & Shipbuilding** Industry. His wide experiences covers in the areas of **Hot Rolling** Process, **Hot Strip Mill**, **Mill** Operations, **Roll Mill**, **Steel Making** Process, **Steel** Manufacturing, **Electric Arc Furnace** (**EAF**), **Steel Forging**, **Steel** Manufacturing & Process Troubleshooting, **Slit Rolling**, **Carbon Steel Pipe** Wall Thickness & Grade Selection, **Ferro-Alloys**, **Steel Metallurgy**, **Steel** Structure Welding, **Steelmaking** Slag, **Steel** Making Application, **Heat Treatment** & **Prevention Techniques**, **Corrosion** Fabrication & Inspection and **Post Weld Heat Treatment**. Further, he is also well-versed in **Welding** Inspection, **Welding** & **Machine** Techniques, **TIG** & **Arc Welding**, **Shielded Metal Arc Welding**, **Gas Tungsten** & **Gas Metal Arc Welding**, **Welding** Procedure Specifications & Qualifications, **Aluminium Welding**, **Hot Work-Safety**, **SMAW**, **GTAW**, **Welding** Techniques, **Pipeline Welding** Practices, **Welding** Engineering, **Welding** Fatigue & Fracture Mechanics, **Welding Inspection Technology**, **Welding Safety**, **Welding** Defects Analysis, **Welding Technology**, **Welding Problems**, **Welding & Non Destructive** Testing and **Metallurgy Techniques**.

During his career life, Mr. Poulos has gained his practical and field experience through his various significant positions and dedication as the **Chief Executive**, **Head of Technical Studies**, **Manager**, **Senior Consultant**, **Lead Welding Engineer**, **Senior Welding Engineer**, **Design Engineer**, **Sales Engineer**, **Author**, **Welding Instructor**, **Visiting Lecturer** and **Technical Proposal Research Evaluator** from various international companies such as Greek Welding Institute, Hellenic Quality Forum and International Construction Companies such as Shipbuilding, Aircraft Industry and Oil and Gas Industry.

Mr. Poulos is a **Registered Chartered Engineer** and has a **Master's** degree in **Naval Architecture**, a **Bachelor's** degree in **Welding Engineering** and a Master of Business Administration (**MBA**) from the **Sunderland University**, **Aston University** and **Open University**, **UK**, respectively. Further, he is a **Certified Trainer/Instructor**, an active Member of Chartered Quality Institute (**CQI**), The British Welding Institute (**TWI**), The Royal Institution of Naval Architects (**RINA**) and American Welding Society (**AWS**), a Registered **EWF/IW** (European Welding Federation-International Welding Institute W/E) and an **IRCA** Accredited External Quality Systems Auditor through BVQI. He is an **Author** of Technical Book dealing with Protection/Health/Safety in the Welding/Cutting domain and delivered various trainings, seminars, conferences, workshops and courses globally.

Course Fee

US$ 10,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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 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: ***Sunday, 06th of September 2026***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Introduction to Steel Manufacturing Process***
0900 – 0930	***Product & Process Characteristics***
0930 – 1000	***Quality Management***
1000 – 1015	*Break*
1015 – 1115	***Hot Strip Quality Parameters – Overview***
1115 – 1215	***Measurement of Quality Parameters in the Rolling Mill***
1215 – 1230	*Break*
1230 – 1330	***Statistical Methods for Measurement Evaluation (Mean Value, Standard Deviation)***
1330 – 1420	***Data Storage Through going Quality Control – Concept***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 07th of September 2026***

0730 – 0830	***Scheduling of Rolling Programs & Rolling Campaigns – General Remarks & Rules***
0830 – 0930	***Defect Catalogue (Under Coiling) to be covered with Quality Management***
0930 – 0945	*Break*
0945 – 1030	***Coil Box Operations***
1030 – 1130	***Coil Operation, Maintenance & Automation***
1130 – 1215	***Surface, Profile & Width***
1215 – 1230	*Break*
1230 – 1330	***Definition of Thickness Profile, Strip Contour & Flatness***
1330 – 1420	***Profile & Flatness Actuators***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 08th of September 2026

0730 – 0830	***Mechanical Design***
0830 – 0930	***Controller Design***
0930 – 0945	*Break*
0945 – 1030	***Profile Control Flatness Control (PCFC) – Model Components***
1030 – 1130	***Influencing Parameters on Profile, Contour & Flatness***
1130 – 1215	***Thermal Crown***
1215 – 1230	*Break*
1230 – 1330	***Roll Wear***
1330 – 1420	***Load Distribution Across Strip Width***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 09th of September 2026

0730 – 0830	***Preset & Adaption Algorithm***
0830 – 0930	***Furnaces & Mill Area***
0930 – 0945	*Break*
0945 – 1030	***Furnaces Operation, Maintenance & Automation***
1030 – 1130	***Roughing Mill & Edger Operations, Pass Scheduling, Maintenance & Automation***
1130 – 1215	***Secondary Descaler & Finishing Mill Operations, Pass Scheduling, Maintenance & Automation***
1215 – 1230	*Break*
1230 – 1330	***Coiling***
1330 – 1420	***Down Coiler Operation, Maintenance & Automation***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: Thursday, 10th of September 2026

0730 – 0830	***Defect Catalogue including Practical Measures to Prevent***
0830 – 0930	***Measurement of Coil Face Profile & Multivariable Coiling Control***
0930 – 0945	*Break*
0945 – 1100	***Control System***
1100 – 1215	***Salient Features of PLC's, TCS & Level-2 Systems***
1215 – 1230	*Break*
1230 – 1300	***Media Systems***
1300 – 1345	***Operation, Maintenance & Automation Information about Hydraulic, Pneumatic & Lubrication Systems***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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