



COURSE OVERVIEW RE0930

Process Plant Shutdown, Turnaround & Troubleshooting

Course Title

Process Plant Shutdown, Turnaround & Troubleshooting

Course Date/Venue

March 03-07, 2024/Alsancak 1 Meeting Room, Crowne Plaza Istanbul - Harbiye, an IHG Hotel, Istanbul, Turkey

Course Reference

RE0930

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



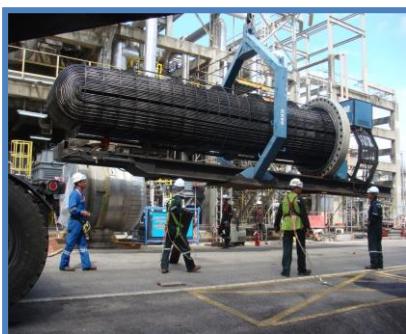
Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.



The process industry is losing over half a billion dollars of profits a year due to poor turnaround results and missed opportunities. The majority of turnarounds lacked strategic focus and front-end planning. In addition, turnaround teams lacked leadership and were understaffed. The major negative factor is the growing gap between higher turnaround performance expectations and rapidly shrinking qualified resources to manage the turnarounds. As a result, the planning effort not only starts late, but it is also ineffective, and typically does not contribute in the turnaround success.



This course is designed to bridge the above-mentioned gap. It will provide turnaround managers and engineers with enough knowledge and skills to understand the purpose of the turnaround, to properly plan and manage the turnaround, and to achieve exponential results of their turnaround project. The course will teach participants how to establish a systematic turnaround management processes and procedures that incorporate the best turnaround practices, planning techniques and execution strategies.





Turnaround results have a long-term effect on the facility's operational reliability and it dictates the plant's operational efficiency and business survival in the competitive global market. The turnaround performance can be dramatically improved if companies focus on key issues such as strategic planning, selection of qualified contractors, synergistic and innovative organizations, and tactical initiative to improve field productivity.

The course will cover the emerging industry trends, turnaround benchmarking and the challenges faced by plant executives to consistently achieve pacesetter results on plant shutdowns and turnarounds. We will teach you how to fairly balance your business, marketing and financial goals with your plant needs for mechanical integrity and operational reliability. We will show you how to focus on risk areas, early work scope definition, high-performance initiatives, the assignment of qualified staff and the best practice contracting strategy. Upon the completion of this course, you will have good knowledge to perform World-Class turn arounds.

Course Objectives

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

- Get a certificate as a “*Professional Turnaround Manager*”
- Apply systematic techniques in the shutdown, turnaround and troubleshooting of process plants
- Implement the special needs of time constrained projects (24/7)
- Identify the work to be accomplished for the shutdown project
- Plan to meet deadlines & complete turnaround projects on time within budget
- Apply shutdown best practices
- Plan, lead, organize, control and co-ordinate shutdown type projects
- Schedule the work effectively
- Manage resources effectively
- Implement feedback systems
- Identify risks and manage these effectively
- Reporting and documenting the shutdown activity
- Recognize the use of software packages

Who Should Attend

This course is intended for those involved directly or indirectly in the plant shutdown and turnaround operations. This includes maintenance and project staff such as managers, engineers, planners, supervisors and other technical people.

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 Certificate(s)

(1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs)

* Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *



Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

CEUs

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-21

HTME No. 8667-2014-9020-2555

Participant Name: Abdulsatar Al Otaibi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
RE0930	Process Plant Shutdown, Turnaround & Troubleshooting	10 Nov-14 Nov, 2021	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY



Jaryl Castillo
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by



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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: -

-  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.

-  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.

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. Saleh Aich is a **Senior Mechanical & Maintenance Engineer** with over **20 years** of extensive experience within the **Oil & Gas, Petrochemical** and **Refining** industries. His expertise widely covers in the areas of **Shutdown & Turnaround, Maintenance Planning & Scheduling, Reliability Maintenance Management, Spareparts & Inventory Management, Combustion Techniques, Combustion System Performance, Pump Operation & Maintenance, Compressor**

Maintenance & Troubleshooting, Gas Turbine Control & Protection Systems, Valve Troubleshooting & Maintenance, Vibration Analysis, Oil Analysis, Dry Gas Seals, Packing & Mechanical Seals, Seal Support Systems, Mechanical Seal Failure Analysis & Troubleshooting, Seal Maintenance & Repair, Bearing Care & Maintenance, Couplings & Alignment, Alignment Methods, Troubleshooting Piping & Pipe Support Systems, Heat Exchangers Maintenance & Inspection, Pressure Vessel Design, Fabrication & Testing, Burners, Blowers, Piston & Plunger Gearboxes, Fin-Fans, Separators, Expansion Drums, Filters, Molecule Sieve, Tanks, Fittings, Root Cause Failure Analysis (RCFA), Computerized Maintenance Management System (CMMS), Maintenance Management, Planning & Scheduling Work Management, Parts & Inventory Management, Turnaround & Shutdowns, Condition Monitoring, Regeneration Unit, NGL & Condensate, Furnace Operation & Troubleshooting, Performance Measure & Indicators, Total Productive Maintenance (TPM), Preventive & Predictive Maintenance Analysis, Rotating & Static Equipment, Machinery & Equipment Failure Analysis, Gas & Steam Turbines, Boilers, Coolers, Diesel & Gas Engines, Heaters, Separators, Storage Tanks, H₂S and ISO 9001:2008 Internal Quality Management System.

During his career life, Mr. Saleh has gained his practical and field experience through his various significant positions and dedication as the **Maintenance Instructor, Mechanical Supervisor, Maintenance Engineer, Mechanical Engineer, Contract Engineer, Planning Engineer** and **Senior Instructor/Lecturer** for various multi-national companies such as the ADNOC Gas Processing (**GASCO**), **ConocoPhillips** and Syrian Gas Company.

Mr. Saleh has a **Bachelor** degree in **Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer** and has acquired various certifications and has further delivered numerous training, courses, workshops, seminars and conferences worldwide.

Course Fee

US\$ 6,000 per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), 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 course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: Sunday, 03rd of March 2024

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0900	Introduction & Fundamentals Introduction to PM: What is a Project? • PM Associations & Body of Knowledge • Project Management Body of Knowledge (PMBOK) • Project Management Elements • Projects Environment • Project Life Cycle Phases • Project Managers Job profile • Project Manager Job Description • Project Management Skills • Project Management Toolkit
0900 – 0915	Planning the Shutdown Identifying the Work • Starting Your Project • Project Charter/Project Document • Defining & Limiting the Scope • Constraints of the Shutdown
0915 – 0945	Prioritizing the Proposed Work Identifying the Work • Review the Maintenance Backlog • Jobs Not Requiring a Shutdown • Equipment History • Predictive Maintenance (PDM) Records • Preliminary Work of Shutdown • Walk-downs & Check Lists • Solicit the Input of Others • Reviewing Shutdown Files • Identify Start-up Activity • Compiling Identified Work
0945 – 1000	Break
1000 – 1030	Sources of Shutdown Work & Shutdown Project Parameters Class Task
1030 – 1100	Risk Management Staffing Assumptions • Estimate Risks • Commercial Data • Procurement Problems • Project Risk Management – Model
1100 – 1200	Risk Management Plan Identify Risks Throughout the Project • Develop Risk Assessment Criteria • Tabulate The Risks • Prepare Standby Plans or Alternatives
1200 – 1230	The Project Managers Role
1230 – 1245	Break
1245 – 1330	Quality Control Plan & Project Quality Management
1330 - 1400	Quality Management Group Task
1400 - 1420	Shutdown Manager's Skills
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2: Monday, 04th of March 2024

0730 – 0930	Planning Processes Doing the Right Work • Doing The Work Right • Doing The Work at the Right Time
0930 - 0945	Break





0945 – 1015	What is the Difference Between Planning & Scheduling? What is Scheduling? • Planning Objectives • Planning Tools Cycle
1015 – 1045	Project Management Toolkit Project Plan • Shutdown Plan
1045 – 1115	Shutdown Definition The Shutdown Work Breakdown Structure • The Project WBS – It's Uses • The Project Work Breakdown Structure • The Shutdown Budget • The Project OBS • The Shutdown OBS • The Shutdown WBS
1115 - 1130	The Shutdown WBS & SOW Group Task
1130 – 1200	Planning Thought Process What Must Happen First on the Job? • Who Must Do This Step? • How Many People Are Required? • What Parts, Materials, or Supplies Will Be Needed? • Is Any Support Equipment Required? • How Long Will It Take? • What Must Happen Next on this Job? • Documentation
1200 – 1215	Determining Contract Work Technical Support • Non-technical Support • Work That Can Be Performed Off-site • Work Requiring Special Equipment • Activities from WBS • Activities Data • Task Duration – PERT Method • Activity Work Content & Costing/Pricing
1215 - 1230	Break
1230 - 1330	Base Line Plan with Budget Approval Networks For Activity Logic – Overview & Convention • Shutdown– Early Start Calculations – Forward • Project Plan – Late Start Calculations– backwards, Float Calculations – Subtract & Network to Gantt Chart • Common Network Errors • Schedules • Milestones
1330 – 1420	Base Line Plan with Budget Approval (cont'd) Resource Utilization • Milestone Plan & Chart • Resource Utilization • Resource Loading & Leveling • Schedules: Resource Requirements • Manual Load Leveling
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3: Tuesday, 05th of March 2024

0730 – 0900	Base Line Plan with Budget Approval (cont'd) Leveling Other Resources • Resource Utilization • Budgets & Committed Cash Flow • Tracking Project Costs • The Basic Principle • Base Line Plan
0900 – 0930	Shutdown – Network Logic, Schedules: Committed Cash Flow & Schedules: Actual Projected Cash Flow Group Task
0930 - 0945	Break
0945 - 1015	Organizing & People Management Shutdown Toolkit • The Shutdown Organisation • Organizing Tools & Techniques • Most Important Communications • Tender / Contract Clause Coverage • Parts, Material & Equipment • Material & Equipment Responsibility





1015 - 1115	Organizing & People Management (cont'd) Tracking Long Delivery Items • Accounting • Reporting Structure • Assigning Responsibility • Shutting Down Meeting • Organization Breakdown Structure (OBS)
1115 - 1145	Organizing Group Task
1145 - 1215	The Matrix Organisation Administration • Communication • Forms, Formats & Files • Project File • Shut Down Toolkit- Resource Utilization
1215 - 1230	Break
1230 - 1330	Leadership Tools & Techniques Team Selection - Organisation • - Motivation • - Shutdown Sponsor Role
1330 - 1420	Execution & Feedback The Execution Phase • Shutdown Practical Execution Issues • Feedback on Project Status • Job Status Update • Feedback on Project Status • Feedback on Project Status: Costs
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4: Wednesday, 06th of March 2024

0730 - 0930	Execution & Feedback (cont'd) Project Practical Control • Project Review Meeting • Materials Management • Staging/Rigging • Shutdown Safety • OSHA Requirements
0930 - 0945	Break
0945 - 1015	Quality Control Plan (QCP) Information Cost of Quality • Inspection Reports • Activity Inspection Results • Quality Control Sheet
1015 - 1100	Quality Group Task
1100 - 1230	Proven Turnaround Practices The Nature of Turnaround/Shutdown Project Management • The Environment In Which a Turnaround/Shutdown Takes Place • Turnaround/Shutdown Success Factors • More Success Factors • Similar Planning Approach To Projects • Elements of a Turnaround/Shutdown • Turnaround/Shutdown Toolkit • The Work Breakdown Structure (WBS) & the Organization Breakdown Structure (OBS) • Identifying the Work • General Shutdown/Turnaround Checklist • Planning A Plan • Milestone Plan • Milestone Chart • Work Scope • Budgets & Cost Control • Projects
1230 - 1245	Break
1245 - 1400	Proven Turnaround Practices (cont'd) Materials • Process Operations • Pre-shutdown/Pre-turnaround Reviews • Safety • Typical Safety Questions That Should Be Asked • Inspection • Contracting • Quality: What is Required? • Quality Control Plan (QCP) • Quality Control Plan (QCP) Inspection Report • Quality Control Sheet • Risk Management • Shutdown/Turnaround Practices Discussion





1400 – 1420	Control of Shutdown Control Tools & Techniques • Tracking Project Costs • Project Practical Control • Controlling • Control - Overview • Control: CSCS = Cost Schedule Control System • Control Cycle -CSCS • CSCS Illustrative Graph • Scope Control
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

Day 5: Thursday, 07th of March 2024

0730 – 0930	Control of Shutdown (cont'd) Shutdown & Turnaround • Shutdown Acceleration • Project Acceleration • Contractor Controls • Control Tools & Techniques • Tracking Project Costs • Project Practical Control • Controlling • Control - Overview
0930 – 0945	Break
0945 – 1015	Control of Shutdown (cont'd) Control: CSCS = Cost Schedule Control System • Control Cycle -CSCS • CSCS Illustrative Graph • Scope Control • Shutdown & Turnaround • Shutdown Acceleration • Project Acceleration • Contractor Controls
1015 – 1030	Accelerating a Project & Start-up & Handover Group Task
1030 – 1100	Start-up & Handover Elements of Handover • Contactor Handover • Final Report • Conclusion
1100 – 1200	Use of Computer & Software Project Management Software • Sorting & Communicating Information
1200 – 1230	Using Microsoft Project & Shutdown Workshop Group Task
1230 – 1245	Break
1245 – 1300	Typical Causes of Shutdown Failure Work not Clearly Defined • Risks not Analysed or Managed with Contingency Plans • No Baseline Plan -Poor or Non-existent Planning • Lack of Scope Management • Poor Leadership • Not Taking Environmental needs into the Plan • Focus on Critical Path items only- the Rest Catch up with you
1300 – 1315	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1315 – 1415	COMPETENCY EXAM
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 “MS Project” and “Mindview Software”.



The screenshot displays the Mindview Software interface. At the top, a window titled 'Problem Solving.mind' shows a complex mind map with nodes for 'Assessment', 'Planning & Measurement', and 'Monitoring'. Below this, a 'Word' window is open, showing a document with sections for 'PROBLEM SOLVING' and 'Planning'. The 'Mind map' label is positioned to the right of the software windows.

Mindview Software

Course Coordinator

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