



## **External Training Course**

# **Advanced Process Operations & Troubleshooting Excellence**

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**From 08 Dec. To 12 Dec. 2025**

**From 12 Jan. To 16 Jan. 2026**

**From 02 Feb. To 06 Feb. 2026**

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Dubai. UAE**

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**External Training Course:**

**Advanced Process Operations &  
Troubleshooting Excellence**

**From 08 Dec. To 12 Dec. 2025**

**Fees: 1300 KD**

**From 12 Jan. To 16 Jan. 2026**

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**From 02 Feb. To 06 Feb. 2026**

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**Course Overview:**

This intensive five-day course is designed for process operators, panel operators, shift supervisors, and process engineers to develop advanced operational skills in running, troubleshooting, and optimising refinery and petrochemical processes. It equips participants with systematic problem-solving approaches to enhance plant safety, reliability, and efficiency.

**Course Objectives:**

**By the end of this course, participants will be able to:**

- Interpret complex process flow diagrams and operating parameters effectively.
- Apply structured troubleshooting methodologies to operational issues.
- Identify root causes of operational upsets and implement corrective actions.
- Optimise unit operations for improved performance and energy efficiency.
- Enhance safety awareness in daily operations and abnormal situations.
- Integrate operational excellence principles into their work practices.

**Training Methodology:**

Interactive presentations with visual process animations.

Group discussions and operational problem-solving exercises.

Real-life case studies from refinery and petrochemical operations.

Practical troubleshooting scenarios and exercises.

Final workshop and participant action planning for their work areas.

**Organisational Impact:**

Improved operational reliability and process efficiency.

Reduced downtime and unplanned outages.

Enhanced safety performance and risk management.

Empowered and proactive operations teams.

Strengthened operational excellence culture.

### **Personal Impact:**

Strengthened troubleshooting and problem-solving skills.  
Broader understanding of process optimisation techniques.  
Increased confidence in managing abnormal situations.  
Enhanced teamwork and communication capabilities.  
Professional development for career growth in operations.

### **Course Content:**

#### **Day 1: Fundamentals of Advanced Process Operations**

- Overview of refinery and petrochemical processes.
- Review of key unit operations and equipment.
- Process flow diagrams (PFDs) and P&IDs advanced interpretation.
- Critical operating parameters and performance indicators.
- Safety considerations in process operations.

#### **Day 2: Troubleshooting Principles and Methodologies**

- Troubleshooting fundamentals for process operations.
- Types of process problems and typical causes.
- Systematic troubleshooting approach (symptom-cause-effect).
- Troubleshooting tools: trending, cause-and-effect diagrams, checklists.
- Interactive troubleshooting scenarios and exercises.

#### **Day 3: Root Cause Analysis in Operations**

- Difference between troubleshooting and root cause analysis.
- Structured RCA methods (5 Whys, Fishbone diagrams).
- Case studies of operational failures and their root causes.
- Practical RCA exercises for operational incidents.
- Implementing corrective and preventive actions (CAPA).

#### **Day 4: Process Optimisation for Performance Excellence**

- Process optimisation objectives and constraints.
- Adjusting operating conditions for maximum efficiency.
- Energy optimisation in process operations.
- Optimising heat exchangers, pumps, and compressors performance.
- Case studies of successful process optimisation in refineries.

#### **Day 5: Managing Abnormal Situations & Continuous Improvement**

- Identifying abnormal situations in process operations.
- Operator's role in early detection and mitigation.
- Communication and teamwork during operational upsets.
- Operational excellence and continuous improvement concepts.
- Group workshop: developing troubleshooting & optimisation action plans.

### **Course Agenda (Bilingual A/E):**

#### **(1<sup>st</sup> Day) Agenda**

8.30	9.00	Opening Remarks (30 Min.).
9.00	11.30	<u>Discuss Course Major Points:</u> <ul style="list-style-type: none"> <li>• Fundamentals of Advanced Process Operations.</li> <li>• Troubleshooting Principles and Methodologies.</li> <li>• Root Cause Analysis in Operations.</li> <li>• Process Optimisation for Performance Excellence.</li> <li>• Managing Abnormal Situations &amp; Continuous Improvement.</li> </ul>
11.30	12.00	Coffee Break
12.00	14.00	<u>Fundamentals of Advanced Process Operations:</u> <ul style="list-style-type: none"> <li>• Overview of refinery and petrochemical processes.</li> <li>• Review of key unit operations and equipment.</li> <li>• Process flow diagrams (PFDs) and P&amp;IDs advanced interpretation.</li> <li>• Critical operating parameters and performance indicators.</li> <li>• Safety considerations in process operations.</li> </ul>
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

#### **(2<sup>nd</sup> Day) Agenda**

9.00	11.30	<u>Troubleshooting Principles and Methodologies:</u> <ul style="list-style-type: none"> <li>• Troubleshooting fundamentals for process operations.</li> <li>• Types of process problems and typical causes.</li> <li>• Systematic troubleshooting approach (symptom-cause-effect).</li> </ul>
11.30	12.00	Coffee Break
12.00	14.00	<u>Troubleshooting Principles and Methodologies:</u> <ul style="list-style-type: none"> <li>• Troubleshooting tools: trending, cause-and-effect diagrams, checklists.</li> <li>• Interactive troubleshooting scenarios and exercises.</li> </ul>
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

### (3<sup>rd</sup> Day) Agenda

9.00	11.30	<u>Root Cause Analysis in Operations:</u> <ul style="list-style-type: none"> <li>• Difference between troubleshooting and root cause analysis.</li> <li>• Structured RCA methods (5 Whys, Fishbone diagrams).</li> <li>• Case studies of operational failures and their root causes.</li> </ul>
11.30	12.00	Coffee Break
12.00	14.00	<u>Root Cause Analysis in Operations:</u> <ul style="list-style-type: none"> <li>• Practical RCA exercises for operational incidents.</li> <li>• Implementing corrective and preventive actions (CAPA).</li> </ul>
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

### (4<sup>th</sup> Day) Agenda

9.00	11.30	<u>Process Optimisation for Performance Excellence:</u> <ul style="list-style-type: none"> <li>• Process optimisation objectives and constraints.</li> <li>• Adjusting operating conditions for maximum efficiency.</li> <li>• Energy optimisation in process operations.</li> </ul>
11.30	12.00	Coffee Break
12.00	14.00	<u>Process Optimisation for Performance Excellence:</u> <ul style="list-style-type: none"> <li>• Optimising heat exchangers, pumps, and compressors performance.</li> <li>• Case studies of successful process optimisation in refineries.</li> </ul>
14.00	14.30	Questions and Discussion
14.30		Buffet Lunch

### (5<sup>th</sup> Day) Agenda

9.00	11.30	<u>Managing Abnormal Situations &amp; Continuous Improvement:</u> <ul style="list-style-type: none"> <li>• Identifying abnormal situations in process operations.</li> <li>• Operator's role in early detection and mitigation.</li> <li>• Communication and teamwork during operational upsets.</li> </ul>
11.30	12.00	Coffee Break
12.00	14.00	<u>Managing Abnormal Situations &amp; Continuous Improvement:</u> <ul style="list-style-type: none"> <li>• Operational excellence and continuous improvement concepts.</li> <li>• Group workshop: developing troubleshooting &amp; optimisation action plans.</li> </ul>
14.00	14.30	Questions, Discussion & Conclusion Training Course.
14.30		Buffet Lunch