AMERICAN GLOBAL INSTITUTE
FOR PRIVATE TRAINING

## External Training Course

# Process Plant Optimization Technology and Continual Improvement

---

**From 16 Jun. To 20 Jun. 2025**
**From 28 Jul. To 01 Aug. 2025**
**From 20 Oct. To 24 Oct. 2025**

---

**Mercure München City Center**
**Munich, Germany**


**Mr. Ghanem F. Al-Otaibi**
**GM & Institute Owner**
**Tel.: 00965 22248901** **Fax: 00965 22204999**
**Mob.: 00965 65548855** **Mob.: 00965 97273712**
**Email: admin@agi-kw.com** **Email: agi-kw@hotmail.com**
**W/SITE: WWW.AGI-KW.COM**

**American Global**
**Institute For Private Training**

Tel. 00965 - 22248901
Mob. 00965 - 65548855
Email admin@agi-kw.com
W/Site www.agi-kw.com

## External Training Course:

# Process Plant Optimization Technology and Continual Improvement

**From 16 Jun. To 20 Jun. 2025 Fees: 1950 KD**
**From 28 Jul. To 01 Aug. 2025 Fees: 1950 KD**
**From 20 Oct. To 24 Oct. 2025 Fees: 1950 KD**

## Course Rationale

The increasing demand for efficiency, reliability, and sustainability in process industries has created an urgent need for enhanced plant performance and strategic improvement. This course blends the technical foundations of process optimization with modern continual improvement methodologies, giving professionals the skills to identify inefficiencies, reduce costs, increase production yield, and embed a culture of operational excellence in their facilities.

## Course Learning Outcomes

**Participants completing this course will be able to:**

- Define and apply core principles of process plant optimization.
- Diagnose inefficiencies in production, energy use, and system design.
- Use structured problem-solving techniques to eliminate bottlenecks.
- Apply Lean and Six Sigma tools to reduce waste and improve consistency.
- Implement digital technologies (e.g., predictive analytics, process modeling) to support decision-making.
- Develop improvement strategies aligned with HSE standards and corporate goals.
- Establish KPI dashboards to monitor performance and progress of improvement initiatives.

## Detailed Course Content

**DAY 1: Overview of Optimization Technologies**

- Overview of Optimization Technologies for Process Plants
- Elements of Process Plant Optimization Procedure
- Constraints in Optimization: Production, Operation, Economy and Environment
- Optimization Approaches: Mathematical Models and Physical Models – prototype units
- Correlation between Process Optimization and Process Control in Typical Process Plant
- Workshop: Examples and Solutions

**DAY 2: Reliability, Availability and Effectiveness**

- Relationship between Plant Reliability and Availability.
- Optimization of Plant Reliability.
- Optimization of Plant Availability through Improved Maintenance.
- Analysis of Effectiveness of Individual Equipment.
- Optimization of Overall Plant Effectiveness.
- Workshop: Examples and Solutions.

**DAY 3: Best Practices for Energy Consumption**

- Optimization Strategies Aimed at Energy Consumption Reduction.
- World Standards and Benchmarking Guidelines.
- Best Practices in Process Plant Energy Management.
- Energy Conservation Check List in Typical Industrial Plants.
- Optimization of Heat Production and Steam Distribution and Consumption.
- Workshop: Examples and Solutions.

**DAY 4: Managing Operational Excellence Programs**

- Operational Excellence (OE) and continuous improvement frameworks.
- Integrating optimization with HSSE, reliability, and quality goals.
- Building and managing cross-functional teams.
- Data visualization and reporting tools (Power BI, Tableau).
- Key success factors in long-term improvement efforts.
- Case studies: Successful OE programs from global companies.

**DAY 5: Future of Optimization & Workshop**

- Sustainability in plant operations: carbon footprint and ESG metrics.
- Energy transition and role of optimization in net-zero strategies.
- Artificial Intelligence, machine learning, and smart analytics.
- Building an optimization roadmap: strategy, people, and tools.
- Workshop: Develop and present a customized optimization action plan.
- Open discussion, Q&A, and certification ceremony.

## Training Methodology

**The course uses a combination of the following techniques:**

- Interactive lectures with real-world examples.
- Hands-on exercises and group workshops.
- Problem-solving case studies.
- Peer-to-peer knowledge exchange.
- On-the-job implementation planning.

## Course Agenda:

### (1st Day) Agenda

| | | |
|---|---|---|
| 8.30 | 9.00 | Opening Remarks (30 Min.). |
| 9.00 | 11.30 | Discussion of the Key Points of the Course:<br>• Overview of Optimization Technologies.<br>• Reliability, Availability and Effectiveness.<br>• Best Practices for Energy Consumption.<br>• Managing Operational Excellence Programs.<br>• Future of Optimization & Capstone Workshop. |
| 11.30 | 12.00 | Coffee Break |
| 12.00 | 14.00 | Overview of Optimization Technologies:<br>• Overview of Optimization Technologies for Process Plants.<br>• Elements of Process Plant Optimization Procedure.<br>• Constraints in Optimization: Production, Operation, Economy and Environment.<br>• Optimization Approaches: Mathematical Models and Physical Models – prototype units.<br>• Correlation between Process Optimization and Process Control in Typical Process Plant.<br>• Workshop: Examples and Solutions. |
| 14.00 | 14.30 | Questions and Discussion |
| 14.30 | | Buffet Lunch |

### (2nd Day) Agenda

| | | |
|---|---|---|
| 9.00 | 11.30 | Reliability, Availability and Effectiveness:<br>• Relationship between Plant Reliability and Availability.<br>• Optimization of Plant Reliability.<br>• Optimization of Plant Availability through Improved Maintenance. |
| 11.30 | 12.00 | Coffee Break |
| 12.00 | 14.00 | Reliability, Availability and Effectiveness:<br>• Analysis of Effectiveness of Individual Equipment.<br>• Optimization of Overall Plant Effectiveness.<br>• Workshop: Examples and Solutions. |
| 14.00 | 14.30 | Questions and Discussion |
| 14.30 | | Buffet Lunch |

## (3rd Day) Agenda

| | | |
|---|---|---|
| 9.00 | 11.30 | Best Practices for Energy Consumption:<br>• Energy Conservation Check List in Typical Industrial Plants.<br>• Optimization of Heat Production and Steam Distribution and Consumption.<br>• Workshop: Examples and Solutions. |
| 11.30 | 12.00 | Coffee Break |
| 12.00 | 14.00 | Best Practices for Energy Consumption:<br>• Optimization Strategies Aimed at Energy Consumption Reduction.<br>• World Standards and Benchmarking Guidelines.<br>• Best Practices in Process Plant Energy Management. |
| 14.00 | 14.30 | Questions and Discussion |
| 14.30 | | Buffet Lunch |

## (4th Day) Agenda

| | | |
|---|---|---|
| 9.00 | 11.30 | Managing Operational Excellence Programs<br>• Operational Excellence (OE) and continuous improvement frameworks.<br>• Integrating optimization with HSSE, reliability, and quality goals.<br>• Building and managing cross-functional teams. |
| 11.30 | 12.00 | Coffee Break |
| 12.00 | 14.00 | Managing Operational Excellence Programs<br>• Data visualization and reporting tools (Power BI, Tableau).<br>• Key success factors in long-term improvement efforts.<br>• Case studies: Successful OE programs from global companies. |
| 14.00 | 14.30 | Questions and Discussion |
| 14.30 | | Buffet Lunch |

## (5th Day) Agenda

| | | |
|---|---|---|
| 9.00 | 11.30 | Future of Optimization & Workshop:<br>• Sustainability in plant operations: carbon footprint and ESG metrics.<br>• Energy transition and role of optimization in net-zero strategies.<br>• Artificial Intelligence, machine learning, and smart analytics. |
| 11.30 | 12.00 | Coffee Break |
| 12.00 | 14.00 | Future of Optimization & Workshop:<br>• Building an optimization roadmap: strategy, people, and tools.<br>• Workshop: Develop and present a customized optimization action plan.<br>• Open discussion, Q&A, and certification ceremony. |
| 14.00 | 14.30 | Questions, Discussion & Conclusion Training Course. |
| 14.30 | | Buffet Lunch |