

Process Engineer :

Reactor OPS, Troubleshooting & Startup/Shutdown

Date

28th Sep. - 2nd Oct. , 2025

Venue

Dubai | UAE

Objectives :

- **Upon completion of the course, participants will be able to:**
 - ✓ Implement safety systems for exothermic reactions
 - ✓ Apply process intensification techniques
 - ✓ Analyze reactor performance data
 - ✓ Operate batch/continuous reactors safely and efficiently
 - ✓ Diagnose and troubleshoot common reactor problems
 - ✓ Apply practical understanding of central issues in process & mechanical engineering
 - ✓ Execute proper startup/shutdown sequences
 - ✓ Optimize reaction kinetics and heat management
 - ✓ Perform relevant calculations & analyses to assist in operation, sizing, & troubleshooting of processes & mechanical equipment .

Participants :

- ✓ Process engineers
- ✓ Plant operations engineers
- ✓ Reactor design specialists
- ✓ Process safety engineers
- ✓ Production supervisors
- ✓ R&D chemical engineers
- ✓ Process control engineers

Contents :

- **Process Engineering :**
 - ✓ Mass and energy balances .
 - ✓ Reactor types .
 - ✓ Process & Engineering Diagrams .
 - ✓ Flammability .
 - ✓ Electrical area classification .
 - ✓ Risk Management and Hazard Studies .
- **Reactor Fundamentals**
 - ✓ Reactor types (CSTR, PFR, batch, fluidized bed)
 - ✓ Reaction kinetics fundamentals
 - ✓ Residence time distribution analysis
 - ✓ Industrial reactor case studies
- **Reactor Operations**
 - ✓ Temperature/pressure control strategies
 - ✓ Mixing efficiency optimization
 - ✓ Catalyst loading/activation
 - ✓ Fouling prevention techniques
- **Troubleshooting Methodology**
 - ✓ Systematic fault diagnosis approach
 - ✓ Common operational problems (hot spots, channeling)
 - ✓ Catalyst deactivation analysis
 - ✓ Mass/heat transfer limitations
- **Startup & Shutdown Procedures**
 - ✓ Pre-startup safety reviews (PSSR)
 - ✓ Phased heating/cooling protocols
 - ✓ Inerting/purging requirements

To Register

- **Please send an e-mail to :**
info@atecu.org
- **Or by Fax :**
002 02 358 32 305
- **Or by Tel & Mobile:**
002 012 109 777 18
- **Or through Web-site :**
www.atecu.org
- **Or send a mail to :**
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- ✓ Emergency shutdown scenarios
- **Safety Systems**
 - ✓ Runaway reaction prevention
 - ✓ Emergency relief system design
 - ✓ Safety instrumented systems (SIS)
 - ✓ Layer of protection analysis (LOPA)
- **Performance Optimization**
 - ✓ Data analytics for reactor monitoring
 - ✓ Scale-up considerations
 - ✓ Process intensification methods
 - ✓ Energy efficiency improvements
- **Advanced Applications**
 - ✓ Multiphase reactor systems
 - ✓ Electrochemical reactors
 - ✓ Photocatalytic systems
 - ✓ Microwave-assisted reactions
- **Mechanical Maintenance**
 - ✓ Strategies & Philosophies
 - ✓ Code and Standards
 - ✓ Condition Monitoring
 - ✓ Non Destructive Inspection techniques
- **Process Control and Economics**
 - ✓ Classification of control systems
 - ✓ Measured variables
 - ✓ Simple feedback control
 - ✓ Preliminary economic analysis
 - ✓ Fixed and variable costs, break even analysis
 - ✓ Estimating the cost of process equipment and plants

Fees	<ul style="list-style-type: none"> • 5400 USD
Timing	<ul style="list-style-type: none"> • 09:00 Am – 10:30 Am (Section One) • 10:30 Am – 10:45 Am (Break) • 10:45 Am – 12:00 Pm (Section Two) • 12:00 Pm – 12:30 Pm (Break & Pray) • 12:30 Pm – 02:00 Pm (Section Three) • 02:00 Pm – 03:00 Pm (Lunch Break)
Language	<ul style="list-style-type: none"> • English & Arabic .