XCELERATE TRAINING INSTITUTE

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MECHANICAL ENGINEERING

# Process Plant Optimization, Revamping, and Debottlenecking Training Course

| DURATION | LANGUAGE | FORMAT |
|---|---|---|
| 5 days | English | Classroom / Online |

## Upcoming dates

| Dates | Venue | Format | Fee |
|---|---|---|---|
| 12 – 16 Apr 2027 | Live online | Online (live) | €1,200 |
| 18 – 22 Oct 2027 | Live online | Online (live) | €1,200 |
| 15 – 19 Nov 2027 | Berlin | Classroom | €4,800 |

### Register or ask a question

Online: staging.x8ti.com/course/process-plant-optimization-revamping-and-deb…

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# Process Plant Optimization, Revamping, and Debottlenecking Training Course

## Introduction

Introduction

The optimization of process plants requires effective management of maintenance operations and equipment, along with plant reliability and durability.

What is plant Optimization?

The vital aspects of process plant optimization are related to system energy management and the reduction of energy consumption. Many industrial processes and systems currently offer significant potentials for savings. However, bringing significant process changes such as modern controls and newer technologies can also enhance the opportunities for plant optimization. This Xcelerate Training Institute course will discuss the importance of monitoring and adjusting process plant operations. You will learn to do this in a way that sustains optimum levels of efficiency. This is done while maintaining safe and reliable operational procedures.

What is the meaning of debottlenecking?

Why is this “Process Plant Optimization, Revamping and Debottlenecking” training program crucial for effective process plant management? The main aim of a revamp is to improve basic parameters like volume or processing efficiency. Revamping and debottlenecking require flexibility in planning and proficiency in the right engineering gear. Therefore, to optimize and maintain the fundamental performance of a unit, this program is important to take you beyond a surface level of study.

This Xcelerate training course will provide you with a comprehensive view of the process of how to optimize offsite plant operations including design, storage facilities, and inventory management, understand utility management, and expand your knowledge on optimization, revamping, and debottlenecking process plants.

Learning Objectives

- Understand plant optimization and energy conservation in detail
- Describe and practice the managerial tools needed to effectively optimize plant operations
- Evaluate the concept of capacity creep and discuss the methodology of the cost-effective debottlenecking strategies
- Implement systematic methods of optimizing plant reliability including root cause failure analysis, logic diagrams, fault trees, etc.
- Identify the role and importance of management and enterprise information systems in plant optimization
- Acquire knowledge on risk management in process plant optimization
- Describe utility management and rehabilitation in revamping and debottlenecking

- Assess the maintenance, energy, utilities, environmental, and safety parameters in revamping and debottlenecking
- Analyze economic, planning, and other project management issues

Training Methodology

- Lectures
- Video demonstrations
- Quizzes & Evaluations
- Seminars & Presentations
- Group Discussions
- Assignments
- Case Studies & Functional Exercises

Organizational Benefits

- Benefit from training your employees on the definition and importance of mechanical information
- Learn about different roles played within the Process Plant Optimization, Revamping, and Debottlenecking guidelines
- Learn and apply standards in equipment identification, equipment design features analysis, equipment performance calculations
- Understand safe operation and monitoring of equipment and its maintenance
- Delegates will be able to apply the gained knowledge through this course and practice skills and that will impact their respective companies.
- Maintain better organizational safety records

Benefits for You

- Improve your career opportunities and increase your ability to work across relevant global industries
- Secure a relevant job anywhere in the world with the right knowledge in Process Plant Optimization, Revamping, and Debottlenecking
- Get promoted in your current job in the Process Plant Optimization, Revamping, and Debottlenecking field
- Acquire the professional skills and knowledge required to accomplish your tasks with optimal competence and accuracy
- Master the knowledge and techniques to see the future of an effective Process Plant Optimization, Revamping, and Debottlenecking process
- Discover how to work well with your machines and the risks of not being able to operate them accurately
- Contribute to your organization by being knowledgeable enough to determine the need for a program/process at your workplace or understand an existing program better
- Get an opportunity to work through hands-on exercises in detail to gain the skills needed to facilitate a Process Plant Optimization, Revamping, and Debottlenecking study
- Gain the skills to plan, manage, facilitate, and scribe for a Process Plant optimization, Revamping, and Debottlenecking project

Target Audience

- Process plant technical professionals
- Engineers, technicians, and operators
- Supervisors and maintenance personnel
- Project engineers
- Engineering and technical personnel responsible for improving process and petrochemical plant, and refinery profitability
- Those who are involved in planning, managing, and ensuring energy efficiency

Course Outline

Overview of Process Plant Operation

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

Process Plant Optimization Basics

- Process Plant optimization
- Process Control Basics
- Elements of Process Plant optimization
- Components to Optimize Industrial Processes
- Mathematical Model of Process
- Process Variables
- Simulation Technology to Plant and Control
- The Basics of Heat Integration

Energy Management for Businesses & The Environment

- Industrial Energy Management
- Energy Efficiency for Businesses and the Environment
- Energy Use and in Process Industry
- Energy Management Standard: Details
- Energy Management Standard: Features
- Obstacles for Energy Management Programs

Energy Conservation

- World Standards and Bench-marking Guidelines

- Useful Practices in Process Plant Energy Management
- Energy Conservation Check List for Industrial Plants
- Energy Conservation Opportunities
- Energy Audit
- Energy Audit Types
- Bench-marking Energy Intensity and Usage
- New Energy Efficient Technologies
- Technical Evaluation of Potential Opportunities
- Economic Evaluation of Renewable Energy

Plant optimization Activities

- Implications of Plant Optimization Activities
- Technological Modifications to the Plant
- Technology Licenses
- Impact on Human Resources
- Good Safety - Good Business
- Safety Costs: Costs of Injuries

Revamping and Debottlenecking Strategies

- Revamping Strategies
- Production Capacity Enhancement
- Maintenance, Energy, Utilities, Environmental and Safety Parameters
- Economic, Planning, and Project Management Issues
- Case Studies:
- Optimizing a Polypropylene Plant
- Debottlenecking Ethylene & Propylene Plant
- Revamping an Oil Refinery Plant

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# Registration Form

## Process Plant Optimization, Revamping, and Debottlenecking Training Course

Preferred dates: ..... Venue or online: .....

Duration: 5 days Language: .....

Please complete and email this form to us, or register online. We confirm your place and send the invoice within one working day.

### Delegate information

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Official email: ..... Personal email: .....

### Company information

Company name: .....

Address: .....

City / country: ..... VAT / tax number: .....

### Person responsible for training & development

Full name (Mr / Ms / Dr / Eng): .....

Position: ..... Telephone / mobile: .....

Email: .....

### Payment

☐ Please invoice me ☐ Please invoice my company

Signature: ..... Date: .....

**Call**
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**Email this form**
info@x8ti.com

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Open the course page