ICTD
المركز العالمي للتدريب والتطوير
International Centre For Training & Development



Developing Effective Commissioning and Startup Plans (CSU)

Course Introduction:

This 5-day intensive course focuses on the critical aspects of developing effective commissioning and startup (CSU) plans for industrial projects. Participants will learn how to create, implement, and manage CSU plans that ensure safe, efficient, and timely startup operations. The course will cover all stages of the commissioning and startup process, from preparation and risk assessment to post-startup troubleshooting and optimization. Real-world case studies, practical sessions, and interactive discussions will provide participants with the tools to develop comprehensive plans that meet project requirements and industry standards.

Course Objectives:

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

- Understand the Commissioning and Startup Process
- Develop a Comprehensive CSU Plan
- Risk Assessment and Management
- Coordination and Resource Management
- Optimize Startup Operations
- Post-Startup Evaluation and Continuous Improvement

Who Should Attend?

This course is designed for project managers and engineers, commissioning and startup engineers, safety Managers and HSE Professionals.

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Course Outline:

Module 1: Introduction to Extraction Systems

Definition and Importance of Extraction

1.2 Overview of Extraction Methods

1.3 Applications in Different Industries

Module 2: Principles of Extraction

2.1 Thermodynamics of Extraction

2.2 Mass Transfer Principles

2.3 Phase Equilibria

2.4 Kinetics of Extraction Processes

Module 3: Design Considerations

3.1 Material Selection

3.2 Equipment Sizing and Selection

Columns

Heat exchangers

Pumps and compressors

3.3 Safety and Environmental Considerations

3.4 Economic Analysis and Cost Estimation

Module 4: Design of Specific Extraction Systems

4.1 Liquid-Liquid Extraction Systems

4.2 Solid-Liquid Extraction Systems

4.3 Supercritical Fluid Extraction

4.4 Membrane Separation Processes

Module 5: Process Simulation and Modeling

5.1 Introduction to Process Simulation Tools

5.2 Building and Validating Models

5.3 Case Studies of Extraction System Design

Module 6: Control and Optimization of Extraction Systems

6.1 Control Strategies for Extraction Processes

6.2 Process Optimization Techniques

6.3 Troubleshooting Common Issues in Extraction Systems

Module 7: Regulations and Standards

7.1 Overview of Relevant Codes and Standards

7.2 Compliance and Best Practices in Extraction Design

Module 8: Case Studies and Applications

8.1 Real-World Examples of Extraction System Design

8.2 Group Project: Design an Extraction System

8.3 Presentations and Feedback

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods

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- Lectures
- Case Studies and Self Questionaires
- Group Work

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
1p3:30 - 15:00	Last Session

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