

# Petrochemical Process Economics and Cost Evaluation Course

18 – 22 January 2027
Addis Ababa

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**Ref:** 1894_241175 **Date:** 18 – 22 January 2027 **Location:** Addis Ababa **Fees:** 6000 Euro

## Overview

Petrochemical Process Economics and Cost Evaluation Course is a one-week intermediate course for process engineers, cost engineers, project analysts, commercial specialists, and operations planners who need a Process Economics Decision Pack. Participants connect process basis, capacity, yield, feedstock, utilities, capital and operating costs with cash flow, time value of money, NPV, IRR, payback, break-even, sensitivity, scenarios, and uncertainty. The course supports structured comparison without granting investment approval authority or financial advice. Agile Leaders Training Center delivers this petrochemical process economics course.

## Who Should Attend

- Process engineers responsible for capacity, yield, utility, and alternative assumptions
- Cost engineers developing capital and operating cost evidence
- Project analysts building cash-flow and economic comparison models
- Commercial specialists testing feedstock, product, and margin assumptions
- Operations planners evaluating utilization, losses, and cost drivers

The course assumes participants can use spreadsheets and interpret basic process and financial data; investment approval, accounting policy, financing advice, and final estimate authorization remain outside the course.

## Departments and Industries

The course supports petrochemical complexes, chemical manufacturing, refining interfaces, polymers, fertilizers, industrial gases, and engineering projects.

- Process engineering and technology
- Cost engineering and estimating
- Project development and investment analysis
- Operations planning and performance
- Commercial strategy and technical procurement

## Learning Objectives

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

- Build a process-economic basis from capacity, yield, feedstock, and utility assumptions
- Analyze capital, operating, fixed, variable, and unit production costs
- Apply time-value-of-money logic to cash-flow models
- Evaluate NPV, IRR, payback, and break-even results
- Compare sensitivity, scenario, and uncertainty effects
- Create a Process Economics Decision Pack with assumptions and review boundaries

## Course Agenda

### Day 1: Process and Economic Basis

- Process Boundary and Product Basis Definition Sheet
- Capacity, Utilization, Yield, and Loss Assumption Register
- Feedstock, Product, Byproduct, and Utility Balance Map
- Cost Estimate Classification and Scope Definition Matrix
- Economic Evaluation Boundary and Responsibility Register

### Day 2: Capital and Operating Cost Structure

- Equipment and Installation Capital Cost Build-Up Method
- Capacity Scaling and Location Adjustment Worksheet
- Feedstock and Utility Operating Cost Model
- Fixed, Variable, Maintenance, and Overhead Cost Matrix
- Unit Production Cost and Cost-Driver Analysis

### Day 3: Cash Flow and Economic Indicators

- Project Cash-Flow Timeline and Model Structure
- Time Value of Money and Discounting Worksheet
- NPV and IRR Calculation and Interpretation Method
- Payback Period and Break-Even Volume Analysis
- Model Integrity and Assumption Traceability Checklist

### Day 4: Sensitivity, Scenarios, and Uncertainty

- Feedstock, Product Price, and Utility Sensitivity Table
- Capacity, Yield, and Availability Scenario Matrix
- Capital and Operating Cost Range Analysis
- Uncertainty Driver and Correlation Review
- Economic Comparison and Decision-Risk Register

## Day 5: Alternative Evaluation and Decision Record

- Exercise: Process Basis and Cost Estimate Review
- Exercise: Capital and Operating Cost Model Build
- Exercise: Cash Flow, NPV, IRR, and Payback Evaluation
- Exercise: Sensitivity, Scenario, and Break-Even Comparison
- Capstone Exercise: Process Economics Decision Pack

## Practical Exercises

Suggested activities turn technical and cost assumptions into traceable economic comparisons.

- Suggested activity: define a process and product economic basis
- Suggested activity: build capital, operating, and unit-cost structures
- Suggested activity: calculate cash-flow indicators and break-even conditions
- Suggested activity: assemble a Process Economics Decision Pack

## FAQs

### Who should attend and what does the course assume?

The course suits process, cost, project, commercial, and operations personnel. It assumes spreadsheet ability and basic process and financial data interpretation.

### How does this differ from product costing or project cost-control training?

It evaluates process alternatives by connecting technical assumptions to capital, operating, cash-flow, and uncertainty evidence rather than allocating accounting costs or controlling an approved project budget.

### Does the course provide investment approval authority?

No. It develops structured analysis and documentation while approval and financial advice remain with authorized parties.

### Which economic indicators are covered?

The course covers NPV, IRR, payback, break-even, unit production cost, sensitivity, scenarios, and uncertainty within a traceable model.

### What will participants take back to work?

A Process Economics Decision Pack containing basis, cost, cash-flow, indicator, sensitivity, scenario, uncertainty, comparison, and review records.

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## Conclusion

Participants return able to connect petrochemical process assumptions with cost and cash-flow evidence, test uncertainty, compare alternatives, and document economic findings within defined authority boundaries.