

Petrochemical Process Economics and Cost Evaluation Course

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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.

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