Process Economics and Cost Estimation Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s highly competitive industrial landscape, mastering process economics and cost estimation is crucial for engineers, project managers, and business leaders aiming to optimize operational efficiency and maximize profitability. Process Economics and Cost Estimation Training Course equips professionals with advanced cost modeling, capital and operating cost evaluation, and financial feasibility analysis, empowering them to make informed decisions throughout the project lifecycle. By integrating real-world case studies, participants gain practical insights into budget optimization, value engineering, and cost control strategies applicable across chemical, pharmaceutical, energy, and manufacturing industries.

This comprehensive program emphasizes a hands-on, practical approach to cost estimation, focusing on process optimization, risk assessment, and strategic financial planning. Participants will learn to leverage modern cost estimation tools, parametric modeling, and industry-standard best practices to enhance accuracy and reliability in project costing. By bridging the gap between engineering design and economic evaluation, the course ensures professionals are prepared to deliver cost-efficient, high-impact solutions that align with organizational objectives.

Programme Curriculum

Process Economics and Cost Estimation Training Course

Introduction

In today’s highly competitive industrial landscape, mastering process economics and cost estimation is crucial for engineers, project managers, and business leaders aiming to optimize operational efficiency and maximize profitability. Process Economics and Cost Estimation Training Course equips professionals with advanced cost modeling, capital and operating cost evaluation, and financial feasibility analysis, empowering them to make informed decisions throughout the project lifecycle. By integrating real-world case studies, participants gain

practical insights into budget optimization, value engineering, and cost control strategies applicable across chemical, pharmaceutical, energy, and manufacturing industries.

This comprehensive program emphasizes a hands-on, practical approach to cost estimation, focusing on process optimization, risk assessment, and strategic financial planning. Participants will learn to leverage modern cost estimation tools, parametric modeling, and industry-standard best practices to enhance accuracy and reliability in project costing. By bridging the gap between engineering design and economic evaluation, the course ensures professionals are prepared to deliver cost-efficient, high-impact solutions that align with organizational objectives.

Course Duration

5 days

Course Objectives

1. Master process economics principles for effective project decision-making.
2. Develop accurate cost estimation skills for CAPEX and OPEX.
3. Apply financial analysis tools for feasibility and ROI assessment.
4. Understand process optimization techniques to minimize costs.
5. Utilize parametric and detailed cost modeling for various industries.
6. Learn risk assessment strategies for cost control and uncertainty management.
7. Implement value engineering methodologies to enhance project value.
8. Evaluate lifecycle costs and sustainability factors in project planning.
9. Benchmark costs using industry standards and best practices.
10. Analyze sensitivity and scenario planning for economic decision-making.
11. Integrate software tools and digital platforms for cost estimation.
12. Examine case studies to understand real-world cost challenges.
13. Improve cross-functional communication for project finance and engineering alignment.

Target Audience

1. Process Engineers
2. Project Managers
3. Cost Estimators
4. Chemical Engineers
5. Operations Managers
6. Financial Analysts in Industrial Projects
7. Procurement and Supply Chain Professionals
8. Engineering Consultants

Course Modules

Module 1: Fundamentals of Process Economics

- Introduction to process economics and industrial relevance
- Understanding CAPEX vs OPEX
- Cost drivers in process industries
- Economic evaluation metrics-NPV, IRR, ROI
- Case Study: Cost-benefit analysis of a chemical plant expansion

Module 2: Cost Estimation Techniques

- Types of cost estimation: preliminary, detailed, and definitive
- Bottom-up vs top-down approaches
- Parametric modeling techniques
- Estimation accuracy and uncertainty management
- Case Study: Parametric cost estimation for a pharmaceutical plant

Module 3: Capital Cost Estimation (CAPEX)

- Fixed vs working capital requirements
- Equipment and installation costs
- Scaling and factor-based cost estimation
- Cost indices and inflation adjustment
- Case Study: CAPEX calculation for a biofuel production facility

Module 4: Operating Cost Estimation (OPEX)

- Raw materials and utility costs
- Labor and maintenance costs
- Overheads and indirect costs
- Cost optimization strategies
- Case Study: OPEX reduction strategies in a refinery plant

Module 5: Process Optimization for Cost Reduction

- Identifying bottlenecks and inefficiencies
- Lean process improvement techniques
- Energy and resource optimization
- Simulation and modeling for cost efficiency
- Case Study: Process optimization in a water treatment plant

Module 6: Financial Analysis & Feasibility

- Payback period and ROI calculations
- Discounted cash flow and risk analysis
- Sensitivity and scenario analysis
- Investment appraisal methods
- Case Study: Feasibility study of a solar power plant project

Module 7: Risk Management in Cost Estimation

- Risk identification and categorization
- Contingency planning and cost control
- Monte Carlo simulations for cost uncertainty
- Decision-making under uncertainty
- Case Study: Risk-adjusted cost estimation for a petrochemical project

Module 8: Software Tools & Digital Applications

- Overview of cost estimation software
- Digital twins and predictive modeling
- Data-driven decision-making for cost optimization
- Integration with ERP and project management tools

- Case Study: Digital cost modeling in a chemical plant retrofit

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com