Economic Feasibility and Project Management in Engineering Training Course

Ref: #ACE1757

Course Introduction / Overview:

This training course gives a comprehensive look into the core principles of process economics and project management. In today's competitive landscape, engineering projects demand not only technical expertise but also a strong understanding of financial viability and effective project execution. This course bridges that gap by giving participants the tools to make sound economic decisions throughout the project life cycle, from initial feasibility studies to final implementation. We cover essential concepts like cost estimation, financial analysis, risk assessment, and capital budgeting, all within the context of industrial projects. The curriculum is informed by leading academic and professional standards. The book Plant Design and Economics for Chemical Engineers by Max S. Peters, Klaus D. Timmerhaus, and Ronald E. West is a foundational reference. BIG BEN Training Center is committed to giving a forward-thinking curriculum that equips professionals with the skills needed to lead successful, profitable projects. This course is designed to meet the growing demand for engineers who can manage both the technical and financial aspects of complex undertakings.

Target Audience / This training course is suitable for:

- Engineers and technical managers.
- Project managers and coordinators.
- Financial analysis in industrial sectors.
- Business development professionals.
- Engineering students and recent graduates.
- Capital planners and cost estimators.
- Professionals involved in R&D and new product development.

Target Sectors and Industries:

- Oil and gas.
- Manufacturing.
- Construction and infrastructure.
- Chemical and petrochemical.
- Power and utilities.
- Government agencies and large corporations.
- Research and development.

Target Organizations Departments:

- Project management.
- Engineering and design.
- Finance and corporate planning.
- Research and development.
- Operations and production.
- Strategic business units.
- Capital projects and investments.

Course Offerings:

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

- Conduct a detailed economic feasibility study for a project.
- Use capital budgeting techniques like NPV and IRR.
- Create accurate cost estimations for various project phases.
- Develop a comprehensive project charter and work breakdown structure.
- Identify and mitigate project risks and uncertainties.
- Manage project schedules and resources effectively.
- Apply earned value management to monitor project performance.
- Prepare a final project report with a clear financial summary.

Course Methodology:

This training course uses a mix of interactive and practical training methods to give dynamic learning experience. The curriculum combines theoretical lectures with real-world case studies to bridge the gap between academic concepts and professional application. Participants will use hands-on activities, including group workshops and scenario-based exercises, to reinforce their understanding of key topics. We use discussions and Q&A sessions to encourage a collaborative learning environment, where participants can share experiences and insights. The course also includes an in-depth analysis of successful and unsuccessful projects from various industries to highlight best practices and common pitfalls. This approach gives participants the confidence to apply their new knowledge directly to their professional roles. At BIG BEN Training Center, we believe that an engaging and interactive format is key to mastering new skills, so we focus on giving immediate feedback and continuous support throughout the training. The methods are designed to ensure every participant leaf with a clear, practical skill set.

Course Agenda (Course Units):

Unit One: Fundamentals of Engineering Economics.

- Introduction to process economics.
- Time value of money and interest rates.
- Net present value (NPV) and internal rate of return (IRR).
- Capital budgeting and investment decisions.
- Cash flow analysis and profitability metrics.

Unit Two: Cost Estimation and Project Feasibility.

- Types of cost estimation and their accuracy.
- Cost components: fixed, variable, and indirect.
- Feasibility studies and their components.
- Economic evaluation of alternative designs.
- Break-even analysis.

Unit Three: Introduction to Project Management.

- Project life cycle and key phases.
- The role of the project manager.
- Project charter and scope definition.
- Work breakdown structure (WBS).
- Project scheduling: Gantt charts and critical path method.

Unit Four: Project Risk and Resource Management.

- Risk identification and analysis.
- Qualitative and quantitative risk assessment.
- Risk response strategies.
- Resource allocation and management.
- Stakeholder management and communication.

Unit Five: Project Control and Financial Reporting.

- Project monitoring and control.
- Earned value management (EVM) for performance tracking.
- Cost control and forecasting.
- Project closure and final reporting.
- Post-project review and lessons learned.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can modern data analytics and artificial intelligence be integrated into traditional project management frameworks to improve accuracy in risk assessment and financial forecasting for large-scale engineering projects?

What unique qualities does this course offer compared to other courses?

This training course is unique because it brings together the critical disciplines of process economics and project management into one comprehensive program. While many courses focus on one area, this program shows participants how they are deeply connected in real-world engineering projects. We don't just teach you formulas for financial analysis; we show you how to apply them to make strategic project decisions. The content is heavily focused on real-world scenarios and challenges, making it highly relevant for professionals who need to manage both the technical and business sides of their work. The course is built on a practical, hands-on methodology, which means participants will leave with tangible skills they can use right away. It’s an advanced program that gives engineers and managers the skills to ensure their projects are not only technically sound but also economically successful.