



Engineering and Technology Management

COURSE SYLLABUS

Course Number: E M 505

Course Name: Finance for Technical Systems

Instructor: Tim Cobb

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Semester Credits: 3

Prerequisites: None

Course Description and Objectives:

Finance for Technical Systems covers a broad range of managerial accounting and financial concepts, methods, and applications. Finance is an integral part of an organization, and it is imperative that technical managers have a fundamental understanding of the material that is covered in the course.

The course covers costing methods, cost behavior, variances, budgeting, performance evaluation, internal control, capital expenditures, strategic planning, and decision analysis. The course covers more than just calculations; it focuses on analyzing data to support decision making, control resources, improve efficiency and profitability of operations, and implement strategy. The course enables technical managers to make and defend decisions related to production, costs, budgets, special projects, and capital expenditures.

The objective of the course is for students to become fluent and proficient with financial and accounting terms, methods, and concepts. Ultimately, the goal is to equip technical managers with the financial knowledge that is necessary to confidently participate in strategic planning and decision making.

Course Topics:

- Costing Systems & Cost Allocation
- Cost Drivers & Cost Behaviors
- Variances Analysis & Managing Costs
- Profit Planning & Budgeting
- Strategic Planning & Organizational Goals
- Responsibility Centers
- Activities-Based Management
- Strategic Management of Costs, Quality, and Time
- Quality & Value Chain
- Financial Modeling & Forecasting
- Differential Cost Analysis for Operating Decisions
- Pricing Decisions
- Customer Profitability
- Product Choice Decisions
- Make-or-Buy Decisions
- Capital Investment Decisions
- Cash Flow & Time Value of Money
- Net Present Value Method
- Internal Rate of Return
- Investment Project Selection
- Return on Investment
- Economic Value Added
- Performance Evaluation
- Balanced Scorecard
- Corporate Governance
- Internal Control & Ethical Issues

Grading:

Participation: 10%, Homework: 30%, Team Project: 20%, Mid-term Exam: 20%, Final Exam: 20%