

(EF-305) - Engineering Economic and Management

Course Outline

Theory

1. Introduction:

1. Basic Concepts and principles of Economics.
2. Micro- and Macroeconomic theory,
3. The problem of scarcity.
4. Basic concepts of Engineering Economy.
5. Financial effectiveness and non-monetary factors

2. Economic Environment:

1. Consumers and producer goods.
2. Goods and services,
3. Demand & Supply concept.
4. Market Equilibrium.
5. Elasticity of demand.
6. Elasticity of Supply.
7. Measures of Economics worth.
8. Price-supply-demand-relationship.
9. Revenue, Cost and profit function.

3. Elementary Financial Analysis:

1. Basic accounting equation.
2. Development and interpretation of financial statements.
3. Income Statement, Balance Sheet and Cash Flows.
4. Working capital management.
5. Financial Ratio Analysis .

4. Time Value of Money and Financial Returns:

1. Concepts of simple, compound and effective interest rates.
2. Less often than compounding period and more once a year;
3. Present Value, Future Value and Annuities concepts.
4. Uniform gradient and geometric sequence of cash flow.

5. Depreciation and Taxes:

1. Depreciation concept.
2. Economic life
3. Methods of depreciation.
4. Gain (loss) on the disposal of an asset.
5. Depreciation as a tax shield.

6. Basic cost concepts and Break Even Analysis:

1. Types of costs and cost curves;
2. Determination of Cost/Revenues.
3. Numerical and graphical presentations.
4. Practical applications.
5. BEA as a management tools for achieving financial/operational efficiency.

7. Linear Programming:

1. Mathematical statement of linear programming problems.
2. Graphical solutions.
3. Simplex method.
4. Duality Problems.

8. Business Organizations and financial Institutions:

1. Type of ownership, single ownership, partnerships, corporation.
2. Type of stocks and joint stock companies.
3. Banking and specialized credit institutions.

9. Project Management:

1. Integration of Organization Strategy with Projects.
2. Defining the project.
3. Developing a network plan.
4. Managing risk.
5. Reducing project time.
6. Project selection and comparing alternatives techniques scheduling resources.
10. **Introduction to Projection Management and Production Concepts:**
 1. Basic production function,
 2. Stages of production,
 3. Returns to scales,
 4. Production lead time,
 5. Production rate,
 6. Capacity,
 7. Operations,
 8. Planning and control,
 9. Order processing,
 10. Scheduling,
 11. Material requisitions planning,
 12. Line of balance

Suggested Teaching Methodology:

- Lecturing
- Written Assignments Report Writing

Suggested Assessment:

Theory (100%)

- Sessional (20%)
- Quiz (12%)
- Assignment (8%)
- Midterm (30%)
- Final Term (50%)

Recommended Text and Reference Books:

1. Buchbinder Sharon, Introduction to Healthcare Management Latest ed.
 2. Alexander Kolker, Management Engineering for Effective Healthcare Delivery: Principles and Applications, 2012
 3. Kaluzny, Warner, Warren, Zelman, Management of Health Services
 4. Sakharkar Sharon B, Principles of Hospital Administration & Planning, 2009
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