

**4/4 B.Tech. EIGHTH SEMESTER**

**CE8T2 ENGINEERING ECONOMICS AND PROJECT APPRAISAL Credits: 3**  
**Lecture: 3 periods/week Internal assessment: 30 marks**  
**Tutorial: 1 period /week Semester end examination: 70 marks**

**Pre-requisites:** Mathematics, environmental studies

**Learning objectives:**

- To make use of economic analysis to engineering works and construction works for providing the analytical support to discuss achieving value for money and competing alternatives. Develop the ability to work collaboratively with team members of other disciplines.

**Course outcomes:**

At the end of course the student will be able to:

1. Understand the nature and Scope of Engineering Economics
2. Use Economic analysis in the decision making
3. Use various cost concepts and Break-even point analysis
4. Choose best from alternative investment opportunities
5. Prepare cost sheets suitable to specific industries.

**UNIT – I**

**INTRODUCTION TO ECONOMICS**

Nature and Basic Principles of Economics, Law of Supply and Demand, Concept of Engineering Economics, type of efficiency, definition and scope of engineering economics, Micro Economics and Macro Economics.

**UNIT – II**

**ECONOMIC ANALYSIS**

Introduction, and The economic analysis process, examples for simple economic analysis, Classes of economic analyses, marginal selection for a product/ substitution of raw material, design selection for a product, building metrical selection, process planning/ process modification, Present value and discounting.

**UNIT – III**

**COST ANALYSIS AND MARGINAL COSTING**

Cost concepts, Opportunity cost, Fixed vs. Variable costs, explicit costs Vs. Implicit costs, Out of pocket costs vs. Imputed costs. Break-even Analysis (BEA)-Determination of Break-Even Point (simple problems) - Managerial Significance and limitations of BEA. Marginal Costing Introduction, Application of Marginal costing in terms of cost control.

**UNIT – IV**

**METHODS OF ECONOMIC ANALYSIS AND INVESTMENT FEASIBILITY STUDIES**

General, Net present value (NPV), Savings/investment ratio (SIR), Discounted payback period (DPP), Equivalent uniform annual cost (EUAC), Benefit/cost ratio (BCR). Managing Project Resources Flow, Project Feasibility studies, Project Cost – Capital & Operating, Forecasting Income, Estimation of Investment & ROI, Project Evaluation, Financial Sources, and Appraisal Process.

## **UNIT – V**

### **PROJECT COSTING FOR SPECIFIC INDUSTRIES**

Projects Procurement Process, Life – cycle Costing, Project Cost Reduction methods, Project Stores, organization & HRD issues, Computerization. Methods of Costing, Unit costing, job costing, cost sheet and tender and process costing and their variants.

#### **Learning resources:**

##### **Text books:**

1. Planning Analysis: Selection Implementation & Review by Chandra P., Tata McGraw Hill, 2009.
2. Cost and Management Accounting by Jain, S.P. and Narang K.L., Kalyani Publications, New Delhi, 2009.
3. Managerial Economics by Varshney, R.L. and Maheswari K. L., Sultan Chand and Sons, New Delhi, 2002.

##### **Reference books:**

1. Text Book of Project Management by Gopalkrishnan, P. and Ramamoorthy V.E., McMillan, 2007.
2. Project Management & Control by Singh N., Himalaya, 2007.
3. Cost and Management accounting by Arora M.N., Vikas Publication, New Delhi, 2009.
4. Cost and Management Accounting by Pandit Kumar M.P., Excel Books, New Delhi, 2008.