

## 2/4 B.Tech SECOND SEMESTER

### INDUSTRIAL ORGANISATION AND ENGINEERING ECONOMICS

EE4T1

Credits: 4

Lecture: 4 periods/week

Internal assessment: 30 marks

Tutorial: 1 period /week

Semester end examination: 70 marks

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#### **OBJECTIVE:**

This course introduces the basic concepts of management and organisation structure of an industry, concept of Entrepreneurship, Material management cost analysis, engineering economics and project management.

**LEARNING OUTCOMES:** Student shall be able to

1. demonstrate the concepts of Management and organisational structure
2. understand the economic and operations management concepts useful in the production process.
3. apply the project management tools in effective development and implementation of the business activities.
4. develop the entrepreneurial spirit and plan to start their own enterprise.

**UNIT I- Introduction to Management and Organisational Structures:** Concepts of Management- nature, importance and Functions of Management, Taylor's Scientific Management Theory, Fayol's Principles of Management. Basic concepts related to Organisation - Types of mechanistic and organic structures of organisation and their merits, demerits and suitability.

**UNIT II- Industrial Organization and Entrepreneurship:** Characteristic features of Industrial organization, Features and evaluation of Sole Proprietorship, Partnership, Joint Stock Company, State/Public Enterprises and their types. Entrepreneurship vs. Management. Roles & Functions of an Entrepreneur, Stages in entrepreneurial process; Role of entrepreneurs in Economic Development; Entrepreneurship in India; Entrepreneurship – its Barriers.

**UNIT III- Operations Management:** Principles and Types of Plant Layout-Methods of production (Job, batch and Mass Production), Work Study -Basic procedure involved in Method Study and Work Measurement, Business Process Reengineering.

**UNIT IV- Materials Management:** Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records. Statistical Quality Control: chart, R chart, c chart, p chart, (simple Problems), Acceptance Sampling, Deming's contribution to quality. TQM, Six Sigma. JIT.

**UNIT V- Introduction to Engineering Economics:** Introduction to Engineering and Economics, Micro and Macro Economics, Demand analysis, Law of demand, Elasticity of demand and its measurement, Demand forecasting techniques..

**UNIT VI- Theory of Production and Cost Analysis:** Production Function- Iso-quants and Iso-costs, MRTS, Law of variable proportions- Law of returns to scale- Least Cost Combination of Inputs, Cobb-Douglas Production function - Economies of Scale; Cost concepts, Cost Curves, SAC and LAC, Determination of Break-Even Point (simple problems) - Managerial Significance and limitations of BEP

**UNIT VII- Project Management Concepts:** Concept and characteristics of a project, importance of project management, types of project, project organizational structure, project life cycle, Statement of Work, Work Breakdown Structure. Feasibility study, technical and financial appraisal, Social cost benefit analysis.

**UNIT VIII- Project Management (PERT/CPM):** Network Analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within given time, Project Cost Analysis, Project Crashing. (Simple problems)

**Text Books:**

1. N. Appa Rao. & P. Vijaya Kumar: 'Managerial Economics and Financial Analysis', Cengage Publications, New Delhi, 2011
2. S.A. Siddiqui & A.S. Siddiqui, Managerial Economics and Financial Analysis, New Age International Publishers, 2011.
3. Suma damodaran- Managerial Economics, Oxford 2011 References

**Reference Books:**

1. Koontz, H and Wihrich H, "Management", McGraw, New York, 10 th ed., 1995.
2. Ramasamy.T. "Principles of Management", Himalaya Publishing House, New Delhi, 2000.
3. Narayana Reddy: Entrepreneurship. Cengage learning, New Delhi, 2010
4. Rajeev Roy: Entrepreneurship, Oxford University Press, New Delhi, 2010
5. Prasanna Chandra: Projects, Tata McGraw-Hill Education, 2009.