

## 4/4 B.Tech - EIGHTH SEMESTER

EC8T4C

Management Science

Credits: 4

Lecture : 4 periods/week

Tutorial: 1 period /week

Internal assessment: 30 marks

Semester end examination: 70 marks -----

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### Course Objectives:

- To develop knowledge of fundamental management concepts, skills and tools, to aid in problem solving and decision making.
- To develop and understanding about the organizational structure and relationship between authority and responsibility in various structures.
- To discuss the evolution of principles that make it possible to design facilities, processes, and control systems with a degree of predictability as to their performance.
- To develop comprehensive skills in planning, selecting, motivating, and developing the human resources for organisational effectiveness.
- To understand the broad scope of marketing, societal, ethical and other diverse aspects of marketing.
- To familiarize the student with widely used networking models related to decision making, problem analysis and their interpretations in project management.
- To compare conceptual models of strategic management and to understand its applicability in understanding the constraints and opportunities in the sectors.
- To enable the students to understand the contemporary issues in the field of management science and their applicability in the real world.

### Learning Outcomes:

- Students will be aware of the design of organizational structure both industries and academia.
- Students will analyse various functions of management that include operations management, material management, marketing management, HR management helpful in success of organisations.
- Students will understand the importance of project management and strategic management.
- Students will be aware of quality control standards & contemporary management practices being followed both in industries and academia.

### UNIT – I

**Introduction to Management:** Concepts of Management and organization- nature, importance and Functions of Management, Taylor's Scientific Management Theory, Fayol's Principles of Management, Mayo's Hawthorne Experiments, Maslow's Theory of Human Needs, Douglas McGregor's Theory X and Theory Y, Herzberg's Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management.

### UNIT – II

**Designing Organisational Structures :** Basic concepts related to Organisation - Departmentation and Decentralisation, Types of mechanistic and organic structures of organisation (Line organization, Line and staff organization, functional organization, Committee organization, matrix organization, Virtual Organisation, Cellular Organisation, team structure, boundaryless organization, inverted pyramid structure, lean and flat organization structure) and their merits, demerits and suitability.

### **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-Statistical Quality Control: chart, R chart, chart, p chart, (simple Problems), Acceptance Sampling, Deming's contribution to quality.

### **UNIT – IV**

**Materials Management**: Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records. **Marketing**: Functions of Marketing, Marketing Mix, Marketing Strategies based on Product Life Cycle, Channels of distribution

### **UNIT – V**

**Human Resources Management (HRM)** : Concepts of HRM, HRD and Personnel Management and Industrial Relations (PMIR), HRM vs. PMIR, Basic functions of HR Manager: Manpower planning, Recruitment, Selection, Training and Development, Placement, Wage and Salary Administration, Promotion, Transfer, Separation, Performance Appraisal, Grievance Handling and Welfare Administration, Job Evaluation and Merit Rating.

### **UNIT – VI**

**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)

### **UNIT – VII**

**Strategic Management** : Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of Corporate Planning Process, Environmental Scanning, Value Chain Analysis, SWOT Analysis, Steps in Strategy Formulation and Implementation, Generic Strategy alternatives.

### **UNIT – VIII**

**Contemporary Management Practices** : Basic concepts of MIS, End User Computing, Materials Requirement Planning (MRP), Just-In-Time (JIT) System, Total Quality Management (TQM), Six sigma and Capability Maturity Model (CMM) Levels, Supply Chain Management, Enterprise Resource Planning (ERP), Performance Management, Business Process outsourcing (BPO), Business Process Re-engineering and Bench Marking, Balanced Score Card.

### **Learning Resources**

#### **Text Books:**

1. Management Science, Aryasri, TMH, 2004.
2. Management Science, Rajesh C. Jampala, P. Adi Lakshmi, Duvuri Publications, Machilipatnam, 2010.

#### **References:**

- 1 Lane: Marketing Mangement . Kotler Philip & Keller Kevin 12<sup>th</sup> Edition, PHI, 2005
2. Essentials of Management, Koontz & Weihrich 6<sup>th</sup> Edition, TMH, 2005
3. Management — Principles and Guidelines, Thomas N. Duening & John M. Ivancevich, Biztantra, 2003.
4. Production and Operations Management, Kanishka Bedi, Oxford University Press, 2004.
5. Personnel Management, Memoria & S.V. Gauker Himalaya, 25<sup>th</sup> Edition, 2005