

19ME003 Industrial Engineering & Management**3 1 0 3****Course Outcome(s)**

1. Design organization structure and implement management principles in real time business environment
2. Establish layouts for different types of industries, manufacturing, process and service sectors
3. Elaborate productivity and profitability by implementing work study and SQC
4. Select and maintain skilled and sufficient manpower for various business proposals
5. Find total production time and cost by using networking techniques
6. Enunciate a best method of making a product in the production process

COs- POs Mapping

COs	PO ₁	PO ₁₁
1	3	2
2	3	2
3	3	1
4	3	2
5	2	1
6	3	1

3 Strongly linked | 2 Moderately linked | 1 Weakly linked

Unit I

Evolution of Management Thought-Organizational Structures - Douglas McGregor's Theory X and Theory Y, Maslow's Hierarchy of Human Needs, Systems Approach to Management. Designing. Basic concepts related to Organization, Departmentation and Decentralization, Types of mechanistic and organic structures of organization (Line organization, Line and staff organization, functional organization, Committee organization, matrix organization, Virtual Organization) and their merits, demerits and suitability. Cellular Organization and team structure

11+4 Hours**Unit II**

Facilities location- Work study - Plant location, definition, factors affecting the plant location, comparison of rural and urban sites methods for selection of plant, Matrix approach, Plant Layout; definition, objectives, types of production, types of plant layout, various data analyzing forms, travel chart. Definition, objectives, method study; definition, objectives, steps involved, various types of associated charts. Work measurement- definition, time study, steps involved, equipment, different methods of performance rating, allowances, standard time calculation. Work Sampling, definition, steps involved. Standard time calculations and differences with time study

12+3 Hours**Unit III**

Materials Management-Quality Control- Objectives, Inventory, functions, types, associated costs, inventory classification techniques, EOQ, ABC and VED analysis. Inspection and quality control, types of inspections, Statistical Quality Control; techniques, variables and attributes, assignable and non assignable causes, variable control charts, and R charts, attributes control charts, p charts and c charts. sampling plans. Introduction to TQM, Quality Circles, ISO 9000 series procedures

11+4 Hours**Unit IV**

Introduction to PERT / CPM-Introduction to Human Resource Management - Project management, network modelling: PERT/CPM Time and cost estimations. Functions of HRM, Job Evaluation, different types of evaluation methods, Job description, Merit Rating, difference with job evaluation. Different methods of merit ratings, wage incentives.

11+4 Hours**Total: 45+15 Hours****Textbook(s)**

1. O.P. Khanna, Industrial Engineering and Management, S Chand & Co Publications, 3rd Edition, 2013
2. Teslang Martand, Industrial Engineering and Production Management, S Chand & Co Publications, 1st Edition, 2002
3. Phillip E Hicks, Industrial Engineering and Management; a new perspective, TMH publications, 2nd Edition, 1994
4. H.T. Amrine, J. A. Ritchey and O.S. Hulley, Manufacturing Organization and Management, Prentice-Hall, 2nd Edition, 1966
5. P.C. Tripathi and P.N. Reddy, Principles of Management, TMH Publications, 4th Edition, 2012

Reference(s)

1. H. Koontz & H. Weihrich, Essentials of Management, Tata McGraw Hill, 8th Edition, 2010
2. Paneer Selvam, Production and Operations Management, PHI, 3rd Edition, 2012

Sample Question (s)**Internal Assessment Pattern**

Cognitive Level	Int. Test 1 (%)	Int. Test 2 (%)	Open Book Examination (%)
Remember	35	35	-
Understand	45	35	20
Apply	20	30	80
Analyze	-	-	-
Evaluate	-	-	-
Create	-	-	-
Total (%)	100	100	100

Remember

1. List the five objectives of work study
2. List any four merits and demerits of committee organization
3. Define Mc-Gregor"s theory X and theory Y
4. List the three types of plant layout
5. List any four functions of HRM
6. List the three functions of material management?

Understand

1. Explain the factors effecting plant locations
2. Explain about purchase management
3. Write about Statistical Quality Control-techniques
4. Compare the Mc-Gregor"s Theory X and Theory Y

Apply

1. Explain the attribute charts
2. Compare the PERT and CPM
3. Explain about stores management and stores records
4. What are the different types of evaluation methods and explain them?
5. Identify duties of purchase manager