



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Chemical Engineering

Level: Diploma

**Branch: Chemical Engineering , Ceramic Technology,
Plastics Engineering**

Subject Code : DI05000241

Subject Name: Industrial Management

w.e.f. :	2025-26
Semester:	5 th
Category of the Course:	MOPEC

Prerequisite:	This course covers the fundamentals of management in the various industrial organizations including man, material and money management.
Rationale:	Diploma chemical engineer has to manage the production as a responsible chemical technician and first line supervisor in the industries. They have to apply principles and techniques of management to utilize the human resources and manage the processes and operations in best possible way. They have to optimize the resource utilization and apply the managerial aspects in cost reduction and different problem solving activities. Hence the course has been design to develop these competencies and its associated cognitive, practical and effective domain learning out comes.

Course Outcome:

After Completion of the Course, Student will be able to:

No	Course Outcomes	RBT Level
01	Manage human resources using system and organization concepts	R, U
02	Manage Inventory applying concepts of material management	R, A
03	Control and monitor production by applying management techniques	R, U, A
04	Plan and implement projects applying management techniques	R, U, A
05	Perform and use value analysis for cost reduction	R, U, A

**Revised Bloom's Taxonomy (RBT)*



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Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2)	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial/ Practical		
				ESE (E)	PA (M)	PA (I)	ESE (V)	
3	0	0	3	70	30	00	00	100

Course Content:

Unit No.	Content	No. of Hours	% of Weightage
Unit I Concept of System and Management	1.1 Definition of system 1.2 Types of systems 1.3 System parameters 1.4 System variable 1.5 System behavior 1.6 Fundamentals of management 1.7 Functions of management	05	07
Unit II Organization Structure and Organizational Dynamics	2.1 Definition, Goals, Factors considered in formulating structure 2.2 Division of labor, Scalar and functional processes, Span of control, Delegation of authority, Centralization and Decentralization 2.3 Types, advantages, disadvantages, flexibility and applications of organization structure 2.4 Organizational culture and factors affecting organization culture 2.5 Moral: factors affecting moral 2.6 Relationship between moral and productivity 2.7 Effect of high and low moral 2.8 Job satisfaction, factors influencing job satisfaction	09	21



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Unit III Material Management	3.1 Definitions, Functions, Importance of material management, Relationship with other departments 3.2 Objectives of purchase, Purchase systems, Purchase procedure, Terms and various forms used in purchase department 3.3 Functions of storekeeping classification of stores as centralized and decentralized with their advantages, disadvantages and application 3.4 Functions of store keeper, Types of records maintained by store, various types of storage equipment, Codification of stores 3.5 Definition of inventory control, objectives of inventory control, Derivation of expression for EOQ, ABC analysis, other modern methods of analysis 3.6 Inventory models such as Willson's model, Replenishment model, Two bin model	13	12
Unit IV Management Techniques	4.1 Meaning, features, objectives of (1) PPC(Production, planning and control), (2) CPM(Critical path method), (3) PERT (Programme Evaluation and Review Technique) 4.2 Functions of PPC with necessary forms used in it 4.3 Types of productions, Calculation of Economic Batch Quantity (EBQ), Critical ratio scheduling and Gantt charts 4.4 Different terms used in network diagram by CPM/PERT 4.5 Draw network diagram for a real life project containing 10-15 activities, Computation of LPO, EPO 4.6 Determination of critical path on network 4.7 Floats, its types and determination of floats 4.8 Crashing of network and its application 4.9 Concept of value analysis, important methods used in value analysis, VA flow diagram	13	10
Unit V Factory Act and Laws	5.1 Factory act and its important provisions 5.2 Workman Compensation Act its important provisions 5.3 Industrial Dispute Act and its important provisions	05	16



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Total	45	70
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Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks (in%)					
R Level	U Level	A Level	N Level	E Level	C Level
32%	36%	32%	-	-	-

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

(a) Books:

Sr. No.	Title of Book	Author	Publication with place, year and ISBN
1	Factory Management & business organization	A.S Deshpande	Vora & Co. Publishers Pvt. Ltd., Mumbai, 1962
2	Business organization & management	M.C. Shukla	S. Chand & Co., New Delhi, 1970
3	Industrial Engineering & Management	O. P. Khanna	Dhanpat Rai Publications, New Delhi, 1980
4	CPM & PERT principles and Applications	L.S. Srinath	3rd Edition Affiliated East-West Press Private Limited, New Delhi, 1971

Suggested Activities for Students:

Following is the list of proposed student activities. These could be individual and group based.

1. Course/topic based presentation
2. Internet based assignment
3. Teacher guided self-learning activity
4. MCQ/Quiz



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