



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3161501
Semester –VI (Industrial Engineering)
Subject Name: Materials Management

Type of course:

Prerequisite: Nil

Rationale:

The subject intends to equip students with updated knowledge of modern materials management concepts and aims to develop their functional expertise in the store, purchase and inventory management discipline. To increase the profitability of industry, the Course intends to prepare the fleet of students equipped with latest tools and techniques of materials management so that they can face the challenges arising out of present scenario of competitiveness due to globalization of economy.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	2	4	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Introduction to materials management : Role, scope and importance of material control function, materials management in organization, cost aspects, materials management organization, specifications of materials, standardization and variety reduction, waste control, materials research, incoming materials control	10
2	Stores Management: Layout of stores and warehouse, material handling in stores, physical control of stocks : obsolete, surplus and scrap Management, accounting and record keeping of stores, classification, coding and codification systems, Case studies	10
3	Purchasing Management: Purchasing functions and purchasing systems, ABC analysis and VED analysis in purchasing, make or buy decision, selection of sources and vendor rating, legal aspects of purchasing, materials budget, organization for buying. Imports Exports policy, procurement in shortage situation, estimation of dependent and independent demands, lead time analysis, buffer stock, materials requirement planning for organization, Purchasing and quality assurance. International Purchase: Introduction, Procedures and Documentation; Purchasing of Capital Equipment - Appraisal Methods, Evaluating Suppliers' Efficiency.	12



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4	Inventory models: Inventory management & control systems, Inventory classification, Different cost associated to Inventory, Economic Order Quantity, Type of Inventory models: Deterministic and Probabilistic. Information system for Inventory control: P system with uncertain demand, Q system with uncertain demand and lead time. The P system with uncertain demand, comparison between P and Q system.	12
	Total Hours	44

Suggested Specification table with Marks (Theory): (For BE only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	15	25	20	15	15

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Materials Management Procedures, text and cases by AK Datta, PHI Publication
2. Material management an integrated approach by Gopalkrishnan & Sundarsan, PHI Publication
3. Materials management by Immer D.S.
4. Rationalizing Materials management – Datta A. K.
5. Materials management and OR in India by P.G.Manon
6. Materials management by N.K.Nair.
7. Purchasing principles & Techniques by Buity, P.J.H.and Farmer
8. Purchasing management by Borry H.A.
9. Inventory management in India by R. S. Chadda
10. Inventory management by Enrick N.L.
11. Stores accounts & stores control by Burten J.H.

Course Outcomes: Students will be able to:

Sr. No.	CO statement	Marks % weightage
CO-1	Evaluate materials specification, standardization, variety reduction and waste control of materials management.	20
CO-2	Demonstrate store management system	20
CO-3	Describe decision-making for effective and efficient purchase	30
CO-4	Demonstrate Inventory models	30



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Term Work:

The term work shall be based on the topics mentioned above.

List of Experiments:

Experiments as per syllabus contents. It is required to give case study to students for practical exposure.

List of Open Source Software/learning website:

1. Design of material flow system in industry.
2. Design of inventory control model in industry.
3. Process of purchasing for different domain like industry, stores and spare parts store.