



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Master of Engineering

Level: PG

Branch: Construction Engineering and Management

Subject Code: ME02014071

Subject Name: Materials Management

w.e.f. Academic Year:	2024-25
Semester:	2
Category of the Course:	Professional Elective Course

Prerequisite:	Nil
Rationale:	Material management contributes to the efficiency of the supply chain by ensuring smooth and timely flow of materials. It involves coordination with suppliers, logistics providers, and production teams, making sure materials are delivered on time and to the correct specifications.

Course Outcome:

After Completion of the Course, Student will able to:

No.	Course Outcomes
1	Get familiar with the material management organization and procurement process.
2	Decide the plan for organizing material and store management.
3	Create purchase order for procuring material.
4	Apply inventory control techniques for material Management.
5	Suggest quality control techniques and remedial measures to control material wastage.

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/ CA (M)	PA/CA(I)	ESE (V)	
3	0	2	4	70	30	20	30	150



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Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1	MATERIALS MANAGEMENT Importance -its role in construction industry, scope, objectives and functions of material management, Integrated approach to materials management, Role of materials manager. Organizing for materials management – basis for forming organizations – conventional and modern approaches to organizing materials management, Materials identification – classification and codification of materials – standardization – simplification and variety reduction of materials.	07	16
2	MATERIAL PROCUREMENT Material research, Identification of sources of procurement, Planning and creative Purchasing of Materials – Purchase under different situations - Bulk purchasing -budgeting- Norms of Vendor Rating – vendor analysis- Concept of (MRP)- Supply Management – Sources of Supply – Out Sourcing Material Management- Procurement Organization - Procurement Planning and Methods – Legal Aspects – Insurance of Materials, concept of international purchase	08	18
3	INVENTORY MANAGEMENT Inventory Control techniques, Economical Order Quantity (EOQ), Advantages and limitation, ABC analysis-Procedure and its use, concept of (JIT)- Just in time management, Use of (MMS) – Materials Management Systems in materials planning, procurement, inventory, control, cost control etc. Introduction to application of software used for material management.	07	16
4	STORES MANAGEMENT Storing of Materials- Management of stores, Receipt and inspection, location -site layout and site organization, different types of stores, methods of storing store accounts, stock verification- care, safety and security of materials, losses on storage- wastage, stores equipment, materials handling equipment – factors affecting materials handling.	08	18
5	QUALITY CONTROL Conventional methods of quality control of Construction materials. Statistical method of quality control, sampling techniques quality control in process. Quality management and its economics. OR techniques in material management	07	16



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6	WASTE MANAGEMENT Obsolete, surplus and Scrap Materials Management – reasons for accumulation of surplus obsolete and scrap materials – methods of disposal – regulations and procedures	08	18
Total		45	100

Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
20	30	30	10	10	0

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

References/Suggested Learning Resources:

1. Materials Management : An Integrated Approach, P. Gopalakrishnan and Sundaresan, Prentice Hall of India.
2. Materials Management Procedures : Text and Cases, Datta, A. K., PHI Learning
3. Materials of Construction, Ghosh, Tata McGraw - Hill Publication
4. Management of Materials, B.K. Roy Chaudhary, S. Chand & Sons
5. Handbook of Materials Management, P. Gopalakrishnan, Prentice Hall of India
6. Introduction to Materials Management (2009), Arnold, Pearson Education India
7. Purchasing and Inventory Control, K.S. Menon, Wheeler Publishing
