



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering

Subject Code: 3174027

CONSTRUCTION SAFETY AND MATERIALS MANAGEMENT

B.E. 7th SEMESTER

Type of Course: **Elective**

Prerequisite: **NIL**

Rationale:

1. To understand the process of planning, procurement, allocation and control of material resources in construction projects for their optimal use.
2. To understand basic safety hazards and remedial/control measures involved in the construction process

Teaching and Examination Scheme

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE	PA(M)	Viva	PA (I)		
3	0	0	3	70	30	00	00	100

Course Contents

Sr.No.	Topics	Hrs.
1	Materials Management: Objective and functions, Supply chain management and material management, Management organization for materials management, Role of material manager, Material requirement planning, Classification and coding of construction materials for MIS, ABC Analysis, XYZ Analysis, Inventory control systems, Inventory Models: fixed order quantity, economic order quantity, Purchase Function, Vendor Rating, Vendor Analysis, Legal aspects of purchase, E-Procurement, Stores management, Value engineering application for materials, Material Wastage.	21
2	Safety Managements: Introduction to construction safety, OSHA Regulations, Planning for safety provisions, HSE plans, Analysis of construction hazards and accidents, Construction hazards and safety guidelines, Occupational health hazards, Prevention techniques for construction accidents; Site management with regard to safety recommendations, Training for safety awareness and implementation, Construction safety and health manual.	21
	Total	42

Reference Book(s)

1. Gopalakrishnan, P. & Sundarshan, M, Materials Management: An Integrated Approach, Prentice Hall of India Pvt. Ltd., New Delhi.
2. Jhamb L.C., Inventory Management, Everest Publ.
3. Reese C. D. and J. V. Eidson, Handbook of OSHA construction safety and health, 2nd ed., CRC Press, Boca Raton, 2006.
4. Holt A. S. J., Principles of construction safety, Blackwell Publishing, Oxford, 2008.
5. Kwaku, A., Tenah, Jose. M. Guevara, Fundamentals of Construction Management and Organization, Reston Publishing Co., Inc., Virginia, 2005.



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Course Outcome

Students will be able to

Sr. No.	CO statement	Marks % weightage
CO-1	Plan, procure, allocate and control material resources in construction projects for their optimal use.	50
CO-2	Identify various hazards of construction projects and develop & implement effective safety programs as per the safety regulations	50

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
15	35	30	10	00	00

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.