

# GUJARAT TECHNOLOGICAL UNIVERSITY

## CIVIL (CONSTRUCTION ENGINEERING AND MANAGEMENT) (14)

RESOURCES MANAGEMENT

SUBJECT CODE: 2721402

SEMESTER: II

**Type of course:** CORE

**Prerequisite:** NA

**Rationale:** NA

**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)			
					ESE	OEP	PA	RP		
4	2#	0	5	70	30	30	0	10	10	150

**Content:**

Sr. No.	Content	Total Hrs	% Weightage
1	<p><b>Material Management:</b></p> <p>Materials &amp; their peculiarities, material planning, accounting and material reconciliation. Systems of material classification.</p> <p>Role of purchasing function, restraints &amp; factors, purchasing decisions, procedures, forms, records and reports, vendor analysis.</p> <p>Inventory models and control techniques, deterministic and probabilistic models and applications, ABC analysis, replenishment and replacement policies, VED analysis, lead time demand, purchase planning, EOQ model.</p> <p>Wastage audit at site, Site waste material management plan. Computer applications based upon available software's.</p>		
2	<p><b>Equipment management :</b></p> <p>Classification and operational characteristics and production rates of various equipment. New trends and construction equipment of future.</p> <p>Planning and selection of equipments, for earthmoving, hauling, hoisting, conveying, pneumatic, pumping, aggregate production, concrete production, pile driving, tunneling and road construction applications.</p> <p>Equipment procurement, purchase, import of equipment, procedural formalities for import.</p>		
3	<p><b>Preventive Maintenance :</b></p> <p>Availability of spares, equipment servicing and servicing facilities, cost of preventive maintenance, lubricants and centralized lubrication, storage, handling and record keeping for spares.</p> <p>Systems approaches to planning and maintenance of equipment, replacement policies.</p> <p>Depreciation problems in machines</p>		

4	Safety aspects on construction equipment.		
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**Reference Books:**

1. Construction Planning and Management through Systems Techniques by Mahesh Varma - Metropolitan Books Co. Pvt. Ltd.
2. Fundamentals of Construction Management and Organization by Kwaku A. Tenah & Jose M. Guevara - Reston Publishing Co. Inc.
3. Construction Engineering & Management by Dr. S. Seetharaman - Umesh Publications
4. Construction Planning, Equipments & Methods by R.L. Peurity & W.B. Ledbetter -Mc Graw Hill
5. Fundamentals of Construction Management & Organization by K.A. Tenah & J.M. Guevara - Reston Publishing Co.
6. Construction Equipments and its Planning & Applications by Dr. Mahesh Verma Metropolitan Publishing Co.
7. Construction Equipment & Management by S.C. Khanna - Khanna Publishers.  
A. K. Datta Materials Management: Procedures, Text and Cases, PHI Learning Pvt. Ltd.,
8. 2004.
9. Arnold, Introduction To Materials Management, Pearson Education India,2009
10. Richard J. Tersine Principles Of Inventory And Materials Management, Prentice Hall, 1994
11. Richard J. Tersine, Modern Materials Management, John Hardin Campbell – 1977
12. P. Gopalakrishnan, Handbook of Materials Management, PHI Learning Pvt. Ltd.2004

**Course Outcome:**

After learning the course the students should be able to:

1. Prepare material planning, accounting and material reconciliation.
2. Develop systems of material codification.
3. Purchase, utilization and storage of materials.
4. Minimize material wastage.
5. Do efficient & effective equipment management of construction projects.

**Review Presentation (RP):** The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website