

GUJARAT TECHNOLOGICAL UNIVERSITY
M E (Civil) CONSTRUCTION ENGINEERING AND MANAGEMENT

RESOURCES MANAGEMENT

Objectives :

To impart knowledge of *material management* and *equipment management* for efficient & effective construction management of projects.

Course content:

Material Management:

Materials & their peculiarities, material planning, accounting and material reconciliation. Systems of material classification.

Role of purchasing function, restraints & factors, purchasing decisions, procedures, forms, records and reports, vendor analysis.

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.

Wastage audit at site, Site waste material management plan.

Computer applications based upon available softwares.

Equipment management :

Classification and operational characteristics and production rates of various equipment. New trends and construction equipment of future.

Planning and selection of equipments, for earthmoving, hauling, hoisting, conveying, pneumatic, pumping, aggregate production, concrete production, pile driving, tunneling and road construction applications.

Equipment procurement, purchase, import of equipment, procedural formalities for import.

Preventive Maintenance :

Availability of spares, equipment servicing and servicing facilities, cost of preventive maintenance, lubricants and centralized lubrication, storage, handling and record keeping for spares. Safety aspects on construction equipments.

Systems approaches to planning and maintenance of equipment, replacement policies.

Depreciation problems in machines

Tutorials on RESOURCE MANAGEMENT.

- (1) ABC analysis, VED analysis, FSN analysis etc.
- (2) Classical EOQ models.
- (3) EOQ for production run.
- (4) EOQ with planned shortages.

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- (5) Vendor rating.
- (6) Planning & selection of construction equipments.
- (7) Production of construction equipments.
- (8) Owning & operating cost study.
- (9) Study of depreciation of equipments.
- (10) Minimum two site visits.

References :

- (i) Construction Planning and Management through Systems Techniques by Mahesh Varma - Metropolitan Books Co. Pvt. Ltd.
- (ii) Fundamentals of Construction Management and Organization by Kwaku A. Tenah & Jose M. Guevara - Reston Publishing Co. Inc.
- (iii) Construction Engineering & Management by Dr. S. Seetharaman - Umesh Publications
- (iv) Construction Planning, Equipments & Methods by R.L. Peurity & W.B. Ledbetter - Mc Graw Hill
- (v) Fundamentals of Construction Management & Organization by K.A. Tenah & J.M. Guevara - Reston Publishing Co.
- (vi) Construction Equipments and its Planning & Applications by Dr. Mahesh Verma Metropolitan Publishing Co.
- (vii) Construction Equipment & Management by S.C. Khanna - Khanna Publishers.