

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

CORE COURSES

CONSTRUCTION MANAGEMENT

Objectives:

To impart knowledge of parameters of construction projects. To learn management tools & techniques for planning, scheduling, organizing, controlling and monitoring of construction projects.

Course content :

Construction as industry and its challenges, Role of construction management, Methods of construction managements.

Basic requirements of construction management

Overview of CPM / PERT, PERT cost networks : Modifications and extensions of network models, problems and prospects in application of CPM / PERT. Resource based networks, scheduling, monitoring and updating, resource planning and allocation, LOB techniques, network crashing, time cost trade off.

Computer applications and introduction to project management softwares.

Precedence networks, GERT, decision tree etc.

Work study, work breakdown structures, time estimates, application of networks and statistical concepts.

Progress management techniques, performance monitoring techniques, time and motion studies.

Case studies

Tutorials on

1. Work breakdown structure of various construction projects.
2. Practice problems on CPM, PERT.
3. Preparation, crashing and updating of precedence-network for a major construction work.
4. Performing & reporting on time and motion study work measurement of construction activity.
5. Exercises on Resource Levelling.
6. Exercises on Cash Flow analysis.
7. Exercises on LOB
8. Exercises on GERT & decision tree.
9. Practice on M.S. Project

References:

- (i) A Management Guide to PERT/CPM by J.D. Weist & F.K. Levy - Prentice Halls of India Pvt. Ltd.
- (ii) Techniques for Construction Network Scheduling by J.D. Stevens - Mc Graw Hills.

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- (iii) Fundamentals of Network Analysis by Don T. Phillips et al. - Prentice Hall.
- (iv) Project Management for Construction by Chris Handrickson & Tung Au. - Prentice Hall.
- (v) Construction Engineering & Management by Dr. S. Seetharaman - Umesh Publications.
- (vi) Construction Project Management Planning Scheduling and Controlling By K.K.Chitkara Tata Macgrow Hill