

IV Year - II Semester

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CONSTRUCTION TECHNOLOGY AND MANAGEMENT

Course Learning Objectives:

The objective of this course is:

- to introduce to the student the concept of project management including network drawing and monitoring
- to introduce various equipments like earth moving equipment, trucks and handling equipment, aggregate production and construction equipment and machinery, related to construction.
- to introduce the importance of safety in construction projects

Course Outcomes:

Upon the successful completion of this course, the students will be able to:

- appreciate the importance of construction planning
- understand the functioning of various earth moving equipment
- know the methods of production of aggregate products and concreting and usage of machinery required for the works.
- apply the gained knowledge to project management and construction techniques

SYLLABUS:

UNIT- I Construction project management and its relevance – qualities of a project manager – project planning – coordination –scheduling - monitoring – bar charts – milestone charts – critical Path Method – Applications

UNIT -II Project Evaluation and Review Technique – cost analysis - updating – crashing for optimum cost – crashing for optimum resources – allocation of resources

UNIT- III Construction equipment – economical considerations – earthwork equipment – Trucks and handling equipment – rear dump trucks – capacities of trucks and handling equipment – calculation of truck production – compaction equipment – types of compaction rollers

UNIT -IV Hoisting and earthwork equipment – hoists – cranes – tractors - bulldozers – graders – scrapers– draglines - clamshell buckets

UNIT -V Concreting equipment – crushers – jaw crushers – gyratory crushers – impact crushers – selection of crushing equipment - screening of aggregate – concrete mixers – mixing and placing of concrete – consolidating and finishing

UNIT –VI Construction methods – earthwork – piling – placing of concrete – form work – fabrication and erection – quality control and safety engineering

Text Books:

1. Construction Planning Equipment and Methods, Peurifoy and Schexnayder , Shapira, Tata Mcgrawhill
2. Construction Project Management Theory and Practice, Kumar Neeraj Jha (2011), Pearson.
3. Construction Technology, Subir K. Sarkar and Subhajt Saraswati, Oxford University press.
4. Project Planning and Control with PERT and CPM, B. C. Punamia and K K Khandelwal, Laxmi Publications Pvt Ltd. Hyderabad.

References:

1. Construction Project Management - An Integrated Approach, Peter Fewings , Taylor and Francis
2. Construction Management Emerging Trends and Technologies, Trefor Williams , Cengage learning.
3. Hand Book of Construction Management, P. K. Joy, Trinity Press Chennai, New Delhi.