

CONSTRUCTION TECHNOLOGY (Elective-II)

Course Code: 15CE2216

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Course Outcomes: At the end of the course the student will be able to:

CO1: Get the knowledge on underground and underwater construction.

CO2: Get an exposure on advanced concrete construction technology.

CO3: Obtain knowledge on pile driving techniques.

CO4: Workout issues related to man power, optimum utilization of equipment.

CO5: Know the functions of Equipment during construction.

UNIT- I

(10-Lectures)

Underground Construction:

Underground and Underwater Construction – Tunnel-Shaft sinking, Micro Tunneling, Tunnel driving in hard and soft strata, bedding of conduits.

Under water construction:

Problems encountered. Underwater drilling, blasting, Grouting methods in soft and hard soil including Jet grouting and Chemical grouting, Dewatering in shallow and deep excavations using different methods, Vacuum Dewatering and Well point system.

UNIT – II

(10-Lectures)

Advanced Concreting Techniques:

Concrete – Various methods of shuttering, Ready Mix Concrete, Pumped Concrete, Concrete mix design with various methods of concreting and also underwater concreting using Tremie method, concreting for under water Construction.

UNIT- III (10-Lectures)**Pile Construction:**

Piling – Single pile and a group piles (Bored and Driven) during driving, Working loads and ultimate loads on driven and cast-in-situ piles, Piles in land and marine structures. Construction details of precast piles, pre stressed piles, steel piles and friction piles.

UNIT- IV (10-Lectures)**Equipment Management:**

Equipment Management, Costing, Optimum utilization and Equipment selection, depreciation, interest on capital, Manpower, Spare parts etc, Documentation, Log-Books, History Books, Periodical MIS Report.

UNIT- V (10-Lectures)**Construction Equipment:**

Construction Equipments – Understanding basics and functions of Equipment Earthmoving Machinery, Concreting Equipment, Material Handling Equipment and Transportation of Equipments

TEXT BOOKS

1. Tony Bryan, “*Construction Technology: Analysis and Choice*”, 2nd edition, Wiley India
2. Peurifoy, “*Construction Planning, Equipment and methods*”, 6th edition, Tata McGraw Hill Publication

REFERENCE BOOKS:

1. Roy Chudley and Roger Greeno, “*Construction Technology*”, 6th edition, Prentice Hall, 2005.
2. Dr.Mahesh Varma, “*Construction Equipment Planning and Applications*”, 2nd edition, Metropolitan Book Company, 1975