

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma in Transportation Engineering

SEMESTER: V

Subject Name: **Construction Works Management**

Sr No	Course Content	Hours 28
1	Introduction: 1.1 Definition of management, & construction management. 1.2 Object & types of management. 1.3 Modern behavioral management science.	1
2	Construction Team: 2.1 The engineers Contractors and Owners. 2.2 Their role in construction management process 2.3 Construction works manager & skills required for managers at different level.	1
3	Scientific Management & Its Function: 3.1 Definition 3.2 Planning of projects like Dams, Highways, Bridges, Railways etc. 3.3 Organizing 3.4 Directing and motivating	1
4	Construction Planning Scheduling & Controlling: 4.1 Pre and Post tender planning. 4.2 Planning process, Survey Collection and analysis of data. 4.3 Interpretation of plans, Maps, Drawings and Specifications. 4.4 Identification of activities, their execution, and requirement of resources. 4.5 Introduction to CPM & PERT 4.6 Network Compression.	6
5	Organizations: 5.1 Definition and function 5.2 Principles of organization 5.3 Basics components of organizing process 5.4 Primary means of departmental responsibilities, authority, and accountability in PWD . 5.5 Organizational practices in Public works department (PWD). 5.6 Tendering process in PWD ,	4
6	Material Management: 6.1 Identifications of scarce materials and preparing schedule for material.	3

	6.2 Cost Index Layout. 6.3 Material handling Storage and safety precautions.(IS-7969, 1975& IS 4082 1977) 6.4 Economic quantity of Oder and purchase procedure. 6.5 Inspection & testing the quality of material.	
7	Labour Management: 7.1 Essential steps for Optimum labour output and preparation of schedule. 7.2 Labour characteristics Wages and their payment. 7.3 Labour incentives & motivations. 7.4 Relevant labour laws and case studies related to labour disputes.	3
8	Equipment Management: 8.1 Identifications of different alternative equipment and preparing schedule. 8.2 Importance of Owning & Operating costs in making decisions for Hiring & purchase of equipment. 8.3 Inspection, testing and maintenance of equipment. 8.4 safety considerations.	3
9	Safety Management in Construction Work: Study the following BIS codes. 9.1 IS 3969(I) -1966 for Scaffoldings 9.2 IS 3696(II)-1966 for Ladders 9.3 IS 3764 1966 for Execution 9.4 IS 4130 1976 for Demolition of Building 9.5 IS 7205 1974 for Erection of steel structure 9.6 IS 5121 1969 for pilling and other deep foundation 9.7 IS 5916 1970 for construction involving hot bituminous material 9.8 IS 8969 1978 for Erection of Concrete Framed Structure.	2
10	Management information system: 10.1 Purpose and needs. 10.2 System of Management Information System. 10.3 Format of Management Information System. 10.4 Implementation of Management Information System.	2
11	Disaster management: 11.1 Introduction. 11.2 Pre- Disaster Management. 11.3 Management During and after Disaster.	2

Exercise:

No	Exercise	Student activity	Hours 28
Assignments:			
1	Preparing structure charts of different organization.	Student will prepare assignment as per instructions.	2
2	Job layout for different construction sites formats of material schedule.		2
3	Labour laws study & preparation of labour schedule.		2
4	Equipment schedule.		2
5	Material schedule		2
6	Safety precautions.		2
7	Management Information System.		2
Tutorials:			
8	C.P.M.	Student will be given data and asked to draw C.P.M. network with necessary calculation	06
9	Tender	Student will be given task to collect different tender notices in Newspaper, and analyze them.	2
Visits:			
10	Major Construction site nearby.	Student will submit the detailed report on visits carried out. Enforce the knowledge what they got.	4
11	Seminar: Presentation in form of a seminar with report about the different equipment and their utility.		2

References Book:

No.	Name	Author
1	Professional construction management	Donald S Berry
2	Construction Planning & Management	PS Gahlot & BM Dhir Willey Eastern Ltd.
3	Construction Management and Accounts	Harpalsingh Tata McGraw Hill
4	Construction Equipment and its Management	SC Sharma Khanna Publishers.
5	Construction Planning Equipment & Methods	Robert Peurifoy & Willium Ledbetter
6	Management in Construction Industry	PP Dharwadkrer
7	A management guide to PERT/CPM	
8	Construction Management Practice	VK Raina Tata McGraw Hill
9	Construction Management and Planning	Sengupta & Guha Tata McGraw Hill
10	Construction of Structures Management & Works	S.C. Rangwala
11	Project Planning by CPM & PERT	B.C. Punmia & Khandelwal