

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Diploma Engineering				Branch	Civil Engineering			
Semester	VI				Version	1.0.0.0			
Effective from Academic Year			2019-20		Effective for the batch Admitted in			July 2018	
Subject code	1CI2603		Subject Name		CONSTRUCTION PROJECT MANAGEMENT				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	60	100
Hours	3	0	2	0	5	Practical	30	20	50

Pre-requisites:

The students have to know about basics of management aspects and knowledge of different activities of construction project.

Course Learning Outcomes:

The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:

CO1. Explain construction management functions, various organisation structures and duties Of various construction team.

CO2. Explain construction contracts and tendering process.

CO3. Develop the CPM and PERT network of various construction activities.

CO4. Develop skills to manage various construction resources like material, labour and equipment & show professional ethics and concern for safety during various construction works.

The practical should be carried out in such a manner that students are able to acquire different learning outcomes from covered course.

Course Content

Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hr
UNIT-I CONSTRUCTION PROJECT AND ORGANISATION MANAGEMENT	1.1 Construction project management importance, functions, scope 1.2 Organisation-types, characteristics, Functions, principles 1.3 Construction team-roles, responsibilities and skills of construction team 1.4 Stages in construction 1.5 Causes of project failure	1a Describe concept of project management. 1b Draw the flow chart of an organisation. 1c Explain the role of different Construction team members. 1d Describe the causes of project failure.	10	6
UNIT – 2 CONSTRUCTION CONTRACTS AND TENDERING	2.1 Contract-Introduction, its requirement, and types of contracts 2.2 Contract documents and conditions of Contract, Contract agreement. 2.3 Per-qualification of Contract and its Importance 2.4 Tender-Types, Terms and Conditions, issue procedure, opening, Scrutiny, Acceptance, Rejecting 2.5 Prepare tender Notice	2a Explain various features of Contract document. 2b Prepare a Tender document for the construction project. 2c Explain the tendering process 2d Explain different technical terms regarding tendering.	10	07

	2.6 Technical terms- Administrative approval, Technical Sanction, Issue rate, Competent Authority, Secured Advance, Mobilization Advance, Heads of accounts in government organization, Original and repair work, Earnest money deposit (EMD) and Security deposit(SD)			
UNIT – 3 CONSTRUCTION PLANNING, SCHEDULING AND TIME MANAGEMENT	3.1 Project Planning-methods and factors affecting planning 3.2 Scheduling and types of Schedules 3.3 Critical path method-Important terms, Basic Rules, Advantages and disadvantages 3.4 Examples of CPM network 3.5 PERT analysis-Important terms, Advantages and Disadvantages 3.6 Examples on PERT 3.7 Cost optimization 3.8 Introduction and importance of Primavera and MS Project for Construction Project Management	3a Describe various planning methods for construction Works. 3b Prepare Construction schedule. 3c Draw CPM and PERT network for construction work. 3d Describe the features of construction planning software.	15	10
UNIT – 4 MATERIAL MANAGEMENT	4.1 Material management-Purpose, Objective, material Scheduling, material handling, Storage, safety precautions, Economy Order Quantity, inspection and Testing 4.2 Job Layout 4.3 Purchase procedure	4a Describe features of material management. 4b Prepare Job layout. 4c Prepare material schedule.	5	4
UNIT – 5 LABOUR MANAGEMENT	5.1 Labour management-Labour Scheduling, Characteristics, Output of labours, Wages of Workers, Labour Incentives, Labour Welfare, 5.2 Trade Unions, Trade union act-1926, Mini Wage act-1948, Contract labour act-1970,etc	5a Describe features of labour management 5b Prepare labour schedule. 5c Explain labour characteristics. 5d Study different labour laws applicable for construction project.	5	4
UNIT – 6 EQUIPMENT MANAGEMENT	6.1 Equipment management-equipment Scheduling 6.2 Classification of various equipment, Factor affecting selection of construction Equipment, Owning & operating cost of equipment 6.3 Inspection & testing of equipment, Maintenance & repair of equipment	6a Describe features of equipment management. 6b Prepare equipment schedule. 6c Explain inspection & testing of equipment.	5	4
UNIT – 7 HUMAN RESOURCE DEVELOPMENT (HRD) & MIS	7.1 Importance of HRD. 7.2 Supervisor's role as trainer & Motivator 7.3 Techniques to deal human resources effectively. 7.4 Professional Ethics in Engineering 7.5 Management Information System	7a Explain Supervisor's role in Construction work. 7b Explain MIS with example. 7c Implementation of Management Information System	5	6

	Purpose, need, Types, Characteristics, Implementation and Applications			
UNIT – 8 SAFETY MANAGEMENT	8.1 Safety management-requirement, Importance 8.2 Causes of accidents and its type 8.3 Safety precaution-Excavation work, Demolition, Erection 8.4 Safety measures- Scaffolding, Ladder, Piling, Bituminous works	8a Explain need of safety management in Construction. 8b Describe Safety measures in Construction as per IS code.	5	4
		Total	60	45

List of Practical		
No.	Part-A Unit	Name of Practical
1	I	Types of organization and reason's of project failure
2	II	Study given tender documents and formulate report containing terms and conditions
3	II	Study given contract document & analysis its strengths and weaknesses.
4	II	Prepare tender notice for given construction work
5	III	Prepare Bar Charts for given project data.
6	III	Prepare CPM & PERT network for given project data.
7	IV	Prepare material and labour schedule for given project data
8	V	Study different labour laws applicable for construction project and prepare a report
9	VI	Prepare equipment schedule by using MS Project for given project data
10	VII	Practical related to M.I.S. & H.R.D.
	Part-B (Seminar Presentation)	Topic of Seminar shall be given to a group of students. The students are required to submit and present / defend the Seminar in presence of students and teachers and report including PowerPoint presentation to be attached with submission. Each individual student's contribution in group work need to be made explicit.

List of Text Books			
No	Title of Books	Authors	Publication
1	Construction Project Management	K.K.Chitkara	Tata McGraw-Hill
2	Project Planning and Controlling with PERT And CPM	Dr. B.C.Punmia K.K.Khandelwal	Laxmi Publications (P)Ltd
3	Construction Engineering and Management	Seetharaman.S	Umesh Publication

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Total Construction Project Management	George J. Ritz	McGraw Hill
2	Construction Management and Planning	B Sengupta& H Guha	-----

Link of Learning Web Resource	
1	www.issnge.org
2	www.springer.com
3	www.britannica.com
4	www.civil.iitm.ac.in