Syllabus for Diploma Engineering

Civil Engineering

Semester – VI

Subject Name: Construction Project Management

Subject Code: 09CI1602

Diploma Branches in which this subject is offered: Civil Engineering

Objective: The purpose of including this subject is:

1. Learn the importance if planning in construction
2. To make students aware about contract system and various books used on Project
3. Learn PERT and CPM use on project
4. Importance of safety on site (safety management)

Credits Earned: 3

Course Outcomes: After completion of this course, student will be able to

1. Know construction management functions, various organisation structures and duties of various construction team different technic used in construction process.
2. Tender and tendering process
3. Understand CPM and PERT networks.
4. Learn various leadership skills required to manage various construction resources and achieve targets.
5. Show professional ethics and concern for safety during various construction works.

Pre-requisite of course: Building construction, Civil Engineering material

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term work	
2	0	2	3	50	30	20	25	25	150

Contents

Unit	Topics	Contact Hours	Weightage (%)
1	**Construction Project and Organisation Management** • Construction Project management importance, Functions, Scope • Organization-Types, Characteristics, Functions, principles • Construction team-Roles, responsibilities and skills of construction team. • Stages in Construction • Causes of Project failure.	6	22
2	**Contract** • ContractIntroduction, requirement,types • Contract documents and conditions of Contract, Contract agreement. • Per-qualification of Contract- Importance • Measurement book, Muster roll, types of bills and recording. • Methods of getting work done in government organization.	4	15
3	**Construction Planning, Scheduling and Time Management** • Project Planning-methods and factors affecting planning • Scheduling and types of Schedules • Critical path method-Important terms, Basic, Rules, Advantages and disadvantages • Examples of CPM network, PERT analysis-Important terms, Advantages and Disadvantages • Examples on PERT • Cost optimization	5	17
4	**Construction Resource Management** • Material management-Purpose, Objective,material Scheduling, material handling, Storage, safety precautions,Economy Order Quantity, inspection and testing. • .Job Layout, Labour management-Labour Scheduling. • Characteristics, Outputof labours, Wages of Workers, Labour Incentives, Labour Welfare, Trade Unions, Trade union act-1926, Mini Wage act-1948, Contract labour act-1970,etc • Equipment management- equipment Scheduling, Classification of various equipment, Factor affecting selection of construction Equipment, Owning & operating cost of equipment, Inspection & testing of equipment, Maintenance & repair of equipment	7	26

5	**Human Resource development (HRD)& MIS** • Importance of HRD • Supervisor's role as trainer & Motivator • Professional Ethics in Engineering • Management Information SystemPurpose, need, Types, Characteristics, Implementation and Applications	3	10
6	**Safety Management** • Safety management-requirement, importance. • Causes of accidents and its type • Safety precaution-Excavation work, Demolition, Erection • Safety measures- Scaffolding, Ladder, Piling, Bituminous works	3	10
Total		28	

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyse	Evaluate	Create
35%	40%	15%	10%	0%	0%

List of Practical:

Preparation of sketch	**LAB HOURS**
1. Plants And Equipment Used In Construction	
• List the reasons of project failure from a given case study	**2**
• Study given tender documents and formulate report containing terms and conditions	**3**
• Study given contract document & analysis its strengths and weaknesses. (Given contraction documents should be comprehensive covering all terms and conditions).	**4**
• Prepare at least two Bar Charts and prepare CPM and PERT for Project scheduling for given project data.	**8**
• Prepare material and labour schedule for given project data	**3**
• Prepare equipment schedule by using MS Project for given project data	**4**
• Study different labour laws applicable for construction project and prepare a report.	**2**
• Prepare a presentation on relevant topic and present in a seminar	**2**
TOTAL	**28**

Instructional Method:

a. The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

b. The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

c. Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Students will use supplementary resources such as online videos, videos, e-courses, Virtual Laboratory

References:

Sr.no.	Title	Author	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 Management and accounts	Harpalsingh	Tata McGraw-Hill
4	Construction of Structures and Management work	S.C.Rangwala	Charotar Publication
5	Construction Management practice	V.K.Raina	Tata McGraw-Hill
6	Construction Equipment and its Management	S.C.Sharma	Khanna Publication

Supplementary resources:

1. Primavera P6b
2. MS Project.
3. www.slideshare.net
4. www.civil.iitm.ac.in