

Subject Code: 1ET4010602	Subject Title: Construction Management
Pre-Requisite	----

RATIONALE:

Project management skills are important for overall planning, coordination, and control of a project from commencement to accomplishment of the project efficiently and effectively. The awareness of various project management techniques is very essential to ensure that construction projects are completed within time and budget which is a biggest challenge. This course is therefore designed in such a way that after learning this course the students will be able to plan, organize and control construction operations by using various management techniques and software. Thus students would be able to complete the project in time & budget and as per desired quality. This course is therefore very important course for diploma holders in civil engineering since they have to manage construction projects on their own.

COURSE OBJECTIVE:

The content should be taught and implemented with the aim to develop skills so that students are able to acquire following competencies:

1. To understand the contract management and associated labour laws.
2. To know the procedure for scheduling of various activities in construction project.
3. To understand the labour laws, procedure for arbitration, settlements.
4. To know different safety measures in construction projects.

TEACHING AND EVALUATION SCHEME:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)			
Lecture	Tutorial	Practical	Credit	Theory		Practical	
				University Assessment	Continuous Assessment	University Assessment	Continuous assessment
3	-	2	4	60	40	20	30

DETAILS OF COURSE CONTENTS:

S. NO.	TOPIC	Total Hrs.	WEIGHTAGE
1	Construction Project and Organization Management 1.1. Project management-importance, Functions and Scope. 1.2. Organization-Types, Characteristics, Functions, principles. 1.3. Construction team-Roles, responsibilities and skills of construction team. 1.4. Stages in Construction.	06	14
2	Tendering and Accounting 2.1. Contract-Introduction, requirement, types. 2.2. Contract documents and conditions of Contract,	10	24

	Contract agreement. 2.3. Per-qualification of Contract- Importance. 2.4. Tender-Types, Terms and Conditions, issue procedure, opening, Scrutiny, Acceptance, Rejecting. 2.5. Prepare tender Notice. 2.6. Technical terms. 2.7. Accounting terms.		
3	Construction Planning, Scheduling and Time Management 3.1. Project Planning-methods and factors affecting. 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.	10	24
4	Construction Resource Management 4.1. Material management-Purpose, Objective, 4.2. Material Scheduling, Handling, Storage, safety precautions, Economy Order Quantity, inspection and testing. 4.3. Job Layout. 4.4. Labour management. 4.5. Labour Scheduling, Characteristics, Output of labours, Labour Incentives, 4.6. Equipment management. 4.7. Equipment Scheduling. 4.8. Maintenance & repair of equipment. 4.9. Factor affecting selection of construction Equipment,	6	14
5	Human Resource development (HRD)& MIS 5.1. Importance of HRD. 5.2. Supervisor's role as trainer & Motivator. 5.3. Techniques to deal human resources effectively. 5.4. Professional Ethics in Engineering. 5.5. Management Information System-Purpose, Need, Types, Characteristics,	6	14
6	Safety Management 6.1. Safety management-requirement, importance. 6.2. Causes of accidents and its type. 6.3. Safety precaution-Excavation work, Demolition, Erection. 6.4. Safety measures- Scaffolding, Ladder, Piling, Bituminous works.	4	10

COURSE OUTCOME:

After completing this course, student will be able to

1. Understand the contract management and associated labour laws.
2. Prepare and understand the nuances of executing the site layout.
3. Prepare networks and bar charts for the given construction project.
4. Understand the intricacies of disputes, related arbitration and settlement laws.
5. Apply safety measures at construction projects.

LIST OF PRACTICAL:

SR. No.	Experiment
1	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 tender notice for given construction work.
5	Prepare at least two Bar Charts and prepare CPM and PERT for Project scheduling for given project data.
6	Prepare material and labour schedule for given project data.
7	Prepare equipment schedule by using MS Project for given project data.
8	Study different labour laws applicable for construction project and prepare a report.
9	Prepare a presentation on relevant topic and present in a seminar

LIST OF REFERENCES:

Sr.no.	Title	Author
1	Construction Project Management	K.K.Chitkara
2	Construction Management and accounts	Harpalsingh
3	Construction of Structures and Management work	S.C.Rangwala
4	Construction Equipment and its Management	S.C.Sharma
5	Construction Engineering and Management	Seetharaman.S