CIVIL DIPLOMA 3RD YEAR (6TH SEM) LESSON PLAN

LESSON PLAN

NAME OF THE FACULTY	**MR. GAURAV SAINI**
DICIPLINE	**DIPLOMA CIVIL**
SEMESTER	**6TH**
SUBJECT	**CONSTRUCTION MANAGEMENT & ACCOUNTS**
LESSON PLAN DURATION	**15 WEEKS**
WORK LOAD (LECTURE / PRACTICAL) PER WEEK (IN HOURS)	**L-4**

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC	PRACTICAL DAY	TOPIC
1ST	1	Introduction		
	2	Significance of construction management		
	3	Main objectives of construction management and overview of the subject		
	4	Functions of construction management, planning, organising, staffing,		
2nd	5	directing, controlling and coordinating, meaning of each of these with		
	6	respect to construction job.		
	7	Classification of construction into light, heavy and industrial construction		
	8	Stages in construction from conception to completion		
3rd	9	The construction team: owner, engineer, architect and contractors		
	10	functions and inter-relationship, Construction Planning		
	11	Importance of construction planning		
	12	Stages of construction planning		
4th	13	Pre-tender stage,Contract stage		
	14	Scheduling construction works by bar charts		
	15	Definition of activity, identification of activities		
	16	Preparation of bar charts for simple construction work		
5th	17	Preparation of schedules for labour, materials, machinery and		
	18	finances for small works, Limitations of bar charts		
	19	Scheduling by network techniques		
	20	Introduction to network , PERT and CPM		
	21	Difference between PERT and CPM terminology		

6th	22	Organization:Introduction		
	23	Types of organizations: Line, line and staff, functional		
	24	Organization characteristics, Site Organization, Organizing labour at site		
7th	25	Site Organization, Organizing labour at site		
	26	Principle of storing and stacking materials at site		
	27	Location of equipment,Preparation of actual job layout for a building		
	28	Organizing labour at site, Construction Labour, Organizing labour at site		
8th	29	Conditions of construction workers in India, wages paid to workers		
	30	Important provisions of the following Acts:		
	31	Labour Welfare Fund Act 1936 (as amended)		
	32	Payment of Wages Act 1936 (as amended)		
9th	33	Minimum Wages Act 1948 (as amended)		
	34	Control of Progress:Introduction,Methods of recording progress		
	35	Analysis of progress,Cost time optimization for simple jobs -		
	36	Direct and indirect cost, variationwith time, cost optimization		
10th	37	Inspection and Quality Control,Need for inspection and quality control		
	38	Principles of inspection,Stages of inspection and quality control for		
	39	inspection and quality control Earth work, Masonry,RCC		
	40	inspection and quality controlSanitary and water supply services		
11th	41	Accidents and Safety in Construction		
	42	Accidents – causes and remedies		
	43	Safety measures for Excavation work		
	44	Drilling and blasting, Hot bituminous works,Scaffolding		
12th	45	ladders, form work ,DemolitionsSafety campaign and safety devices		
	46	Public Work Accounts,Introduction, technical sanction		
	47	administrative approval, allotment of funds, reappropriation of funds bill		
	48	contractor ledger, measurement book running and final account bills complete		

13th	49	preparation of bill of quantities (BOQ), completion		
	50	certificate & report, hand receipt, aquittance roll.		
	51	Muster Roll labour, casual labour roll-duties		
	52	responsibility of different cadres, budget-stores, returns,		
14th	53	account of stock, misc. P.W. advances T & P – verification		
	54	survey report, road metal material charged direct to works		
	55	account - expenditure & revenue head		
	56	remittance and deposit head, defination of cash		
15th	57	precaution in custody of cash		
	58	book, imprest account, temporary advance,al		
	59	treasury challan, preparation of fin bills		
	60	to prepare accounts register, stock register		

LESSON PLAN

NAME OF THE FACULTY	**MR. MANISH KAUSHIK**
DICIPLINE	**DIPLOMA CIVIL**
SEMESTER	**6TH**
SUBJECT	**QUANTITY SURVEYING**
LESSON PLAN DURATION	**15 WEEKS**
WORK LOAD (LECTURE / PRACTICAL) PER WEEK (IN HOURS)	**L-4**

WEEK	**THEORY**		**PRACTICAL**	
	LECTURE DAY	**TOPIC**	**PRACTICAL DAY**	**TOPIC**
1ST	1	Introduction to quantity surveying and its importance		
	2	Duties of quantity surveyor		
	3	Types of estimates		
	4	Preliminary estimates		
2ND	5	Detailed estimates		
	6	Stages of preparation – details of measurement and calculation		
	7	Measurement Units of measurement for various items of work as per		
	8	measrement unit		
3RD	9	Measurement		
	10	Units of measurement for various items of work		
	11	Rules for measurements		

	12	Different methods of taking out quantities – centre line method and long		
4TH	13	wall and short wall method		
	14	Preparation of Detailed and Abstract Estimates from Drawings for		
	15	A small residential building with a flat roof and pitched roof building		
	16	comprising of		
5TH	17	Two rooms with W.C., bath, kitchen and verandah		
	18	Earthwork for unlined channel		
	19	WBM road and pre-mix carpeting		
	20	Single span RCC slab culvert		
6TH	21	Earthwork for plain and hill roads		
	22	RCC work in beams, slab, column and lintel, foundations		
	23	users septic tank - 10 users		
	24	Calculation of quantities of materials for		
7TH	25	Cement mortars of different proportion		
	26	Cement concrete of different proportion		
	27	Brick/stone masonry in cement mortar		
	28	Plastering and pointing		
8TH	29	White washing, painting		
	30	R.C.C. work in slab, beams		
	31	Analysis of Rates		
	32	Steps involved in the analysis of rates. Requirement of material, labour,		
9TH	33	sundries, contractor's profit and overheads		
	34	Analysis of rates for finished items when data regarding labour, rates of		
	35	material and labour is given:		
	36	Earthwork in excavation in hard/ordinary soil and filling with a		
10TH	37	concept of lead and lift		
	38	RCC in roof slab/beam/lintels/columns		
	39	Brick masonry in cement mortar		
	40	cement Plaster		
11TH	41	White washing, painting		
	42	Stone masonry in cement mortar		
	43	Meaning of contract		
	44	Qualities of a good contractor and their qualifications		
12TH	45	Essentials of a contract		
	46	Types of contracts, their advantages, dis-advantages and suitability		
	47	Single and two cover-bids; tender, tender forms and documents		

	48	submission of tender and deposit of earnest money		
13TH	49	security deposit, retention money		
	50	Classification and types of contracting firms/construction companies		
	51	Preparation of Tender Document based on Common Schedule Rates		
	52	Introduction to CSR and calculation of cost based on premium on CSR		
14TH	53	Exercises on writing detailed specifications of different types of building		
	54	Pointing, plastering and flooring		
	55	White-washing, distempering and painting		
	56	Wood work including polishing		
15TH	57	Sanitary and water supply installations		
	58	False ceiling, aluminum (glazed) partitioning		
	59	Tile flooring including base course		
	60	Construction of W.B.M/Concrete road		

LESSON PLAN

NAME OF THE FACULTY	**MR. GAURAV SAINI**	
DICIPLINE	**DIPLOMA CIVIL**	
SEMESTER	**6TH**	
SUBJECT	**REPAIR MAINTENANCE OF BUILDING**	
LESSON PLAN DURATION	**15 WEEKS**	
WORK LOAD (LECTURE / PRACTICAL) PER WEEK (IN HOURS)		**L-3**

WEEK	THEORY	
	LECTURE DAY	**TOPIC**
1ST	1	Need for Maintenance :Introduction
	2	Importance and significance of repair and maintenance of buildings
	3	Meaning of maintenance, Objectives of maintenance
2nd	4	Factors influencing the repair and maintenance
	5	Agencies Causing Deterioration (Sources, Causes, Effects)
	6	Definition of deterioration/decay,Factors causing deterioration, their classification
3rd	7	Human factors causing deterioration,Chemical factors causing deterioration
	8	Environmental conditions causing deterioration
	9	Effects of various agencies of deterioration on various building materials
4th	10	bricks, timber, concrete, paints, metals, plastics, stones
	11	Investigation and Diagnosis of Defects,Systematic approach/procedure of investigation
	12	Sequence of detailed steps for diagnosis of building defects/problems
6th	13	List non-destructive and others tests on structural elements and materials
	14	evaluate the condition of the building , study of three most commonly used tests
	15	Environmental conditions causing deterioration
7th	16	Defects and their root causes, Define defects in buildings
	17	Classification of defects, Foundations, basements and DPC,
	18	Main causes of building defects in various building elements

8th	19	Walls,Column and Beams,Roof and Terraces,Joinery
	20	Decorative and protective finishes, Services,Defects caused by dampness
	21	Materials for Repair, maintenance and protection ,Compatibility aspects of repair
9th	22	State application of following materials in repairs
	23	Anti corrosion coatings,Adhesives/bonding aids, Repair mortars
	24	Curing compounds, Joints sealants, Waterproofing systems for roofs,Protective coatings
10th	25	Remedial Measures for Building Defects ,Preventive maintenance considerations
	26	surface preparation techniques for repair,Crack repair methods
	27	Epoxy injection,Grooving and sealing,Stitching,Adding reinforcement and grouting
11th	28	Flexible sealing by sealant,Repair of surface defects of concrete, Bug holes
	29	Form tie holes, Honey comb and larger voids, Repair of corrosion in RCC elements
	30	Steps in repairing,Prevention of corrosion in reinforcement
12th	31	Material placement techniques with sketches, Pneumatically applied (The gunite
	32	Open top placement, Pouring from the top to repair bottom face
	33	Birds mouth,Dry packing, Form and pump,Preplaced – aggregate concrete
13th	34	Trowel applied method,Repair of DPC against Rising Dampness, Physical methods
	35	Electrical methods, Chemical methods,Repair of walls, Repair of mortar joints against
	36	Efflorescence removal, Waterproofing of wet areas and roofs, Water proofing of wet areas
14th	37	Water proofing of flat RCC roofs,Various water proofing systems and their characteristics
	38	Repair of joints in buildings, and their characteristics
	39	Techniques for repair of joints,Repair of overhead and underground water tanks
15th	40	Types of sealing joints with different types of sealants
	41	State application of following materials in repairs
	42	Environmental conditions causing deterioration

LESSON PLAN

NAME OF THE FACULTY	**MR. VISHAL ROHILLA**
DICIPLINE	**DIPLOMA CIVIL**
SEMESTER	**6TH**
SUBJECT	**RAILWAY,BRIDGES AND TUNNELS**
LESSON PLAN DURATION	**15 WEEKS**
WORK LOAD (LECTURE / PRACTICAL) PER WEEK (IN HOURS) L3	**L-3**

WEEK	**THEORY**	
	LECTURE DAY	**TOPIC**
1ST	1	Introduction to Indian Railways
	2	Factors influencing the railway routes
	3	brief description of various types of railway survey
2nd	4	Classification of permanent way describing its component parts
	5	Rail Gauge: Definition, types
	6	practice in India
3rd	7	Rails – types of rails
	8	Rail Fastenings: Rail joints, types of rail joints
	9	fastenings for rails, fish plates,bearing plates
4th	10	Sleepers: Functions of sleepers, types of sleepers
	11	requirements of an ideal material for sleepers.
	12	Ballast: Function of ballast
	13	requirements of an ideal material for ballast

6th	14	Brief description regarding different types of crossings/signallings
	15	Maintenance of track: Necessity, maintenance of track
7th	16	inspection of soil, track and fixtures; maintenance
	17	boxing of ballast maintenance gauges, tools
	18	Earth work an drainage: Features of rail road, bed level, width of formation
8th	19	side slopes, drains, methods of construction, requirement of drainage system
	20	revision and test
	21	Bridge – its function and component parts
9th	22	difference between a bridge and a culvert
	23	Classification of Bridges Their structural elements and suitability: According to life-
	24	According to deck level – Deck, through and semi-through According to material –timber,
10th	25	According to structural form; - Grade Seperators-Railway Overbridges (ROB), Railway
	26	Beam type –RCC, T-Beam steel girder bridges, plate girder and box girder, balanced
	27	Arch type – open spandrel and filled spandrel barrel and rib type - Suspension type –
11th	28	According to the position of highest flood level submersible and non submersible
	29	IRC classification
	30	Piers, Abutments and Wingwalls , Piers-definition, parts; types –solid (masonry and RCC),
12th	31	Abutments and wing walls – definition, types of abutments
	32	abutment with wing walls (straight, splayed, return and curved) Launching of Equipment
	33	Bridge bearings Purpose of bearings; types of bearings – fixed plate, rocker and roller
13th	34	Maintenance of Bridges
	35	Inspection of Steel and Equipment bridges Routine maintenance
	36	revision and test
14th	37	TUNNELS Definition and necessity of tunnels
	38	Typical section of tunnels for a national highway and single and double broad gauge
	39	Ventilation –necessity and methods of ventilation, by blowing
15th	40	exhaust and combination of blowing and exhaust
	41	Drainage method of draining water in tunnels
	42	Lighting of tunnels

LESSON PLAN

NAME OF THE FACULTY	**MR. SHRI OM**	
DICIPLINE	**DIPLOMA CIVIL**	
SEMESTER	**6TH**	
SUBJECT	**EQC**	
LESSON PLAN DURATION	**15 WEEKS**	
WORK LOAD (LECTURE / PRACTICAL) PER WEEK (IN HOURS) L3		**L-3**

WEEK	**THEORY**			
	LECTURE DAY	**TOPIC**		
1ST	1	Elements of Engineering Seismology		
	2	General features of tectonic of seismic		
	3	regions. Causes of earthquakes, Seismic		
2nd	4	waves, earthquake size (magnitude and intensity),		
	5	Epicentre, Seismograph,		
	6	Classification of earthquakes,		

3rd	7	Seismic zoning map of India, Static and Dynamic		
	8	Loading, Fundamental period.		
	9	Seismic Behaviour of Traditionally-Built Constructions of India		
4th	10	Performance of building during earthquakes		
	11	Mode of failure (Out-of-plane		
	12	failure, in-plane failure		
6th	13	Diaphragm failure, Connection failure, Non-structural components failure)		
	14	Special construction method		
	15	tips and precautions to be observed		
7th	16	while planning, designing		
	17	construction of earthquake resistant building.		
	18	Introduction to IS: 4326		
8th	19	IS: 13828		
	20	IS: 1893(Part 1),		
	21	IS:154326		
9th	22	IS: 13920 (latest edition)		
	23	Seismic Provision of Strengthening		
	24	Retrofitting Measures		
10th	25	Traditionally-		
	26	Built Constructions		
	27	Brick and RCC Structures		
11th	28	Provision of reinforcement detailing in masonry		
	29	RC constructions		
	30	Disaster Management		
12th	31	Disaster rescue		
	32	psychology of rescue		
	33	rescue workers		
13th	34	rescue plan		
	35	rescue by steps		
	36	rescue equipment		
14th	37	safety in rescue operations		
	38	debris clearance		
	39	casuality management		
15th	40	Revision		
	41	Revision		
	42	Revision		