

BKN POLYTECHNIC NARNAUL

Lesson Plan

Name of Faculty : MR AMIT GUPTA

Discipline : Civil Engg

Semester : 6 TH Semester

Subject : QUANTITY SURVEYING & VALUATION

Lesson Plan Duration: 15 weeks(from MARCH, 2023 to JUNE,2023)

**Work load (Lecture / Practical) per week(in hours): Lectures-4, Practicals -02

Week	Theory	
	Lecture Day	Topic (including assignment/test)
1st	1	Introduction to quantity surveying and its importance.
	2	Duties of quantity surveyor
	3	Types of estimates , Preliminary estimates
	4	Plinth area estimate
	5	Cubic content estimate
2nd	1	Definition Detailed estimates
	2	Stages of preparation
	3	details of measurement
	4	calculation of quantities and abstract
	5	calculation of quantities and abstract
3rd	1	Measurement
	2	Units of measurement for various items of work as per BIS:1200
	3	Units of measurement for various items of work as per BIS:1200
	4	Units of measurement for various items of work as per BIS:1200
	5	Rules for measurements
4th	1	Different methods of taking out quantities – centre line method
	2	Different methods of taking out quantities – centre line method
	3	Different methods of taking out quantities- long wall and short wall method

	4	Different methods of taking out quantities- long wall and short wall method
	5	Revision
5th	1	SESSIONALTEST-1
	2	Preparation of Detailed and Abstract Estimates from Drawings by following CSR rates
	3	Preparation of Detailed and Abstract Estimates from Drawings by following CSR rates
	4	A small residential building with a flat roof comprising of two rooms with W.C., bath, kitchen and verandah
	5	A small residential building with a flat roof comprising of Two rooms with W.C., bath, kitchen and verandah
6th	1	A small residential building with a flat roof comprising of Two rooms with W.C., bath, kitchen and verandah
	2	Earthwork for unlined channel
	3	WBM road and pre-mix carpeting Single span RCC slab culvert
	4	Earthwork for plain and hill roads
	5	RCC work in beams, slab
7th	1	RCC work in column
	2	RCC work in lintel, foundations
	3	septic tank
	4	Calculation of quantities of materials Cement mortars of different proportion
	5	Cement concrete of different proportion Brick/stone masonry in cement mortar of different proportion
8th	1	Plastering, pointing and painting
	2	D.P.C. and flooring Analysis of Rates Steps involved in the analysis of rates. Requirement of material, labour, sundries, contractor's profit and overheads

	3	Earthwork in excavation in hard/ordinary soil and filling with a concept of lead and lift RCC in roof slab/beam/lintels/columns
	4	Brick masonry in cement mortar Cement Plaster White washing, painting
	5	SESSIONALTEST-2
9th	1	Meaning of contract Essentials of a contract
	2	Types of contracts, their advantages, dis-advantages and suitability, system of payment
	3	Single and two cover-bids; tender
	4	forms and documents, tender notice
	5	submission of tender and deposit of earnest money,
10th	1	security deposit, retention money, maintenance period
	2	Classification and types of contracting firms/construction companies
	3	Preparation of Tender Document based on Common Schedule Rates (CSR
	4	Preparation of Tender Document based on Common Schedule Rates (CSR
	5	Introduction to CSR and calculation of cost based on premium on CSR
11th	1	Exercises on writing detailed specifications of different types of building works from excavation to foundations
	2	Exercises on writing detailed specifications of different types of building works from excavation to foundations
	3	superstructure and finishing operation
	4	Exercises on preparing tender documents Earth work
	5	Exercises on preparing tender documents Construction of a small house as per given drawing RCC works
12th	1	Exercises on preparing tender documents Pointing, plastering and flooring
	2	Exercises on preparing tender documents Pointing, plastering and flooring

	3	Exercises on preparing tender documents White-washing, distempering and painting
	4	Exercises on preparing tender documents White-washing, distempering and painting
	5	Wood work including polishing
13th	1	Sanitary and water supply installations
	2	false ceiling, aluminum (glazed) partitioning
	3	Tile flooring including base course
	4	Preparation of comparative statement for item rate contract.
	5	Revision
14th	1	Valuation
	2	Purpose of valuation, principles of valuation
	3	Definition of various terms related to valuation like depreciation
	4	sinking fund, salvage and scrap value
	5	market value, fair rent, year's purchase
15th	1	Methods of valuation - replacement cost method
	2	rental return method
	3	ASSIGNMENT
	4	REVISION
	5	SESSIONALTEST-3

LESSON PLAN

Name of the Faculty MR. AMIT KUMAR

Discipline CIVIL ENGG.

Semester 6TH

Subject EARTHQUAKE RESISTANT BUILDING CONSTRUCTION

Lesson Plan Duration 15 weeks(from MARCH, 2023 to JUNE,2023)

**** Work Load(Lecture/Practical) per week(in hours):-Lectures : 03**

Week		Theory
	Lecture	Topic (inculding assignment/test)
1st	1st	Elements of Engineering Seismology:- General features of tectonic of seismic
	2nd	Causes of earthquakes, Seismic waves,
	3rd	Revision
2nd	4th	Earthquake size (magnitude and intensity), Epicentre, Seismograph,
	5th	Classification of earthquakes,
	6th	Revision
3rd	7th	Seismic zoning map of India,
	8th	Static and Dynamic Loading, Fundamental period.
	9th	Revision
4th	10th	Seismic Behaviour of Traditionally-Built Constructions of India:- Performance
	11th	Mode of failure (Out-of-plane failure, in-plane failure, Diaphragm failure,
	12th	Revision/Assignment
5th	13th	Connection failure,
	14th	Non-structural components failure)
	15th	Revision
6th	16th	Special construction method,
	17th	Tips and precautions to be observed while planning,
	18th	Revision
7th	19th	Tesigning and construction of earthquake resistant building
	20th	Tesigning and construction of earthquake resistant building
	21st	Revision
8th	22nd	Introduction to IS: 4326, IS: 13828, IS: 1893(Part 1), 154326 and IS: 13920
	23rd	Introduction to IS: 4326, IS: 13828, IS: 1893(Part 1), 154326 and IS: 13920
	24th	Revision/Assignment
9th	25th	Seismic Provision of Strengthening
	26th	Retrofitting Measures for Traditionally- Built Constructions,

	27th	Revision
10th	28th	Brick and RCC Structures
	29th	, Brick and RCC Structures
	30th	Revision
11th	31st	Provision of reinforcement detailing in masonry and RC constructions
	32nd	Provision of reinforcement detailing in masonry and RC constructions
	33rd	Revision
12th	34th	Disaster Management: Disaster rescue
	35th	Psychology of rescue,
	36th	Revision
13th	37th	Rescue workers,
	38th	Rescue plan, rescue by steps,
	39th	Revision
14th	40th	Rescue equipment,
	41st	Safety in rescue operations,
	42nd	Revision
15th	43rd	Debris clearance and casualty management.
	44th	Debris clearance and casualty management.
	45th	Revision/Assignment

Lesson Plan

Name of the Faculty Sh.Amit Sandhu (Guest Faculty)
Discipline CIVIL ENGG.
Semester 6TH
Subject STEEL STRUCTURE DESIGN & DRAWING

Lesson Plan Duration 15 weeks(from march, 2023 to june,2023)

**** Work Load(Lecture/Practical) per week(in hours):-Lectures : 04 Practical: 03**

Week		Theory
	Lecture	Topic (including assignment/test)
1st	1st	1. Structural Steel and Sections:
	2nd	1.2 Designation of structural steel sections as per IS handbook
	3rd	2. Riveted Connections:
	4th	types of riveted joints, specifications for riveted joints as per IS
2nd	5th	Failure of a riveted joint. Assumptions in the theory of riveted
	6th	Strength and efficiency of a riveted joint.
	7th	Design of riveted joints for axially loaded members (No
	8th	Numerical Problem on Axially loaded rivetted Joints
3rd	9th	Numerical Problem on Axially loaded rivetted Joints
	10th	Revision /Assignments
	11th	3. Bolted and Welded connections:
	12th	specifications for bolted joints as per IS: 800 - 2007
4th	13th	3.2 Types of welds and welded joints
	14th	Advantages and disadvantages of welded joints and bolted joints
	15th	Design of fillet and butt weld.
	16th	Plug and slot welds
5th	17th	Numerical problems
	18th	4. Tension Members : Different types of sections used as tension
	19th	Analysis and design of single angle section tension members
	20th	Numerical Problem on design of single angle section tension
6th	21th	Numerical Problem on design of single angle section tension
	22th	Analysis and design of Double angle section tension members
	23th	Numerical Problem on design of double angle section tension
	24th	Numerical Problem on design of double angle section tension
7th	25th	Rivetted and welded connections with gusset plate as per IS:800
	26th	Numerical problems on single and double angle section members

	27th	Numerical problems on single and double angle section members
	28th	5. Compression Members: Different sections used as
8th	29th	Analysis and design of single angle sections compression
	30th	Numerical problem on analysis and design of single angle
	31th	Numerical problem on analysis and design of single angle
	32th	Analysis and design of Double angle sections compression
9th	33th	Numerical problem on analysis and design of Double angle
	34th	Numerical problem on analysis and design of Double angle
	35th	6. Roof Trusses : Form of trusses
	36th	pitch of roof truss, spacing of trusses, spacing of purlins,
10th	37th	connection between purlin and roof covering
	38th	Connection between purlin and principal rafter (no design, only
	39th	
	40th	7. Columns: various types of columns
11th	41th	7.1 Concept of buckling of columns, effective length and
	42th	permissible stresses in compression as per IS:800 for different
	43th	7.2 Types of column bases (Descriptive only)
	44th	7.2 Types of column bases (Descriptive only)
12th	45th	7.3 Beam and column, frame and seated connections (descriptive
	46th	7.3 Beam and column, frame and seated connections (descriptive
	47th	Numerical problems on columns
	48th	Numerical problems on columns
13th	49th	Revision /Assignments
	50th	8. Beams : Analysis and design of single section simply
	51th	Introduction to plate girder and functions of various elements of
	52th	Revision /Assignments
14th	53th	9 Fabrication and Erection of Steel Structures like trusses,
	54th	10 Masonry structures – Design of brick column
	55th	Design of wall foundations
	56th	Design of wall foundations
15th	57th	Revision
	58th	Revision
	59th	Revision
	60th	Revision

Practical
Drawing no-1
roof struss
Drawing no-1
roof struss
Drawing no-1
roof struss
Drawing no-2
Column
column base
Drawing no-2
Column
column base
Drawing no-2
Column
column base
Drawing no-3
Column beam connection

Drawing no-3
Column beam connection
Drawing no-3
Column beam connection
Drawing no-4
plate girder(bolted)
Drawing no-4
plate girder(bolted)
Drawing no-4
plate girder(bolted)
Drawing no-5
CAD sheet
Drawing no-5
CAD sheet
Revision

BKN POLYTECHNIC NARNAUL

Lesson Plan

Name of Faculty: Ms.NISHA YADAV (Guest Faculty)

Discipline : CIVIL ENGG.

Semester : 6TH

Subject : Construction Management & Account

Lesson Plan Duration : 15 weeks(from MARCH, 2023 to JUNE,2023)

***Work load (Lecture / Practical) per week(in hours): Lectures-05, practicals -Nil**

Week	Theory	
	Lecture Day	Topic (including assignment/test)
1 st	1 st	Introduction: 1.1 Significance of construction management
	2 nd	1.2 Main objectives of construction management and overview of the subject
	3 rd	1.3 Functions of construction management, planning, organising, staffing, directing, controlling and coordinating,
	4 th	1.4 Classification of construction into light, heavy and industrial construction
2 nd	5 th	1.5 Stages in construction from conception to completion
	6 th	1.6 The construction team: owner, engineer, architect and contractors, their functions and inter-relationship 2. Construction Planning:
	7 th	Importance of construction planning Stages of construction planning - Pre-tender stage Contract stage
	8 th	2.3 Scheduling construction works by bar charts - Definition of activity, identification of activities- Preparation of bar charts for simple construction work 149 - Preparation of schedules for labour, materials, machinery and finances for small works - Limitations of bar charts
3 rd	9 th	2.4 Scheduling by network techniques
	10 th	- Introduction to network techniques;
	11 th	PERT

	12th	CPM, Differences between PERT and CPM terminology
4th	13th	Organization:
	14th	Types of organizations:
	15th	Line,
	16th	line and staff, functional and their characteristics
5th	17th	SESSIONAL TEST-1
	18th	4. Site Organization:
	19th	4.1 Principle of storing
	20th	stacking materials at site 4.2 Location of equipment
6th	21th	4.3 Preparation of actual job layout for a building
	22th	4.4 Organizing labour at site
	23th	5. Construction Labour:
	24th	5.1 Conditions of construction workers in India, wages paid to workers
7th	25th	5.2 Important provisions of the following Acts:
	26th	- Labour Welfare Fund Act 1936 (as amended)
	27th	- Payment of Wages Act 1936 (as amended)
	28th	- Minimum Wages Act 1948 (as amended)
8th	29th	Control of Progress: 6.1 Methods of recording progress
	30th	Analysis of progress
	31th	Taking corrective actions keeping head office informed
	32th	Cost time optimization for simple jobs - Direct and indirect cost,
	33th	SESSIONAL TEST-2

9th	34th	Inspection and Quality Control: 7.1 Need for inspection and quality control 7.2 Principles of inspection
	35th	7.3 Stages of inspection and quality control for
	36th	- Earth work – Masonry – RCC - Sanitary and water supply
		services
10th	37th	Accidents and Safety in Construction:
	38th	Accidents – causes and remedies
	39th	Safety measures for - Excavation work - Drilling and blasting
	40th	- Hot bituminous works- Scaffolding, ladders, form work- Demolitions
11th	41st	8.3 Safety campaign and safety devices
	42th	REVISION OF ALL ABOVE CHAPTERS
	43th	REVISION OF ALL ABOVE CHAPTERS
	44th	REVISION OF ALL ABOVE CHAPTERS
12th	45th	ACCOUNTS 9. Public Work Accounts: Introduction, technical sanction,
	46th	administrative approval, allotment of funds, reappropriation of funds bill,
	47th	contractor ledger, measurement book running and final
	48th	account bills complete, preparation of bill of quantities (BOQ)
13th	49th	hand receipt, acquittance roll.
	50th	Muster Roll labour,
	51th	Casual labour roll-duties
	52th	responsibility of different cadres
14th	53th	budget-stores, returns account of stock, misc.
	54th	P.W. advances T & P – verification, survey report,
	55th	Road metal material charged direct to works,

	56th	account - expenditure & revenue head
15th	57th	remittance and deposit head remittance and deposit head
	58th	imprest account, temporary advance,
	59th	treasury challan
	60th	Sessional test-3

Practical	
Practical Day	Topic
NIL	NIL
NIL	NIL
NIL	NIL

NIL	NIL
NIL	NIL
NIL	NIL
NIL	NIL
NIL	NIL
NIL	NIL

NIL	NIL