Lesson Plan

Name of Faculty : R.L.Jain
Discipline : ELECTRICAL ENGG. (SIRSA)
Semester : 3rd
Subject : Estimating and Costing (E & C)
Lesson Plan Duration : 15 Weeks (From 07.09.20 to 24.12.20)
Work Load (Lecture/Practical) per Week (in Hours): **Lecture – 04, Practical - 04**

Week	Theory		Practical
	Lecture Day	Topic (including assignment/test)	Topic
1st	1	**Unit-1 Introduction:** Purpose of estimating and costing, Performa for making estimates.	1. Framing of Tender and reply to tender to get job/project.
	2	Preparation of materials schedule, costing and price list.	
	3	Preparation of tender document (with 2-3 exercises).	
	4	Net price list, market survey, overhead charges and labour charges.	
2nd	5	Electrical point method and fixed percentage method.	Revision and File Checking
	6	Contingency, profit, purchase system, enquiries and comparative statements, Orders for supply and payment of bills	
	7	Revision	
	8	**Unit-2 Types of Wiring:** Types—Cleat, batten, casing capping and Conduit wiring	
3rd	9	Comparison of different wiring systems.	Viva Voce related to 1st experiment
	10	Selection and design of wiring schemes for particular situation (domestic and industrial).	
	11	Selection of wires and cables, Wiring accessories	
	12	Use of Protective devices i.e. MCB and ELCB, Use of wire-gauge and tables	
4th	13	Revision and Assignment	2. Identification of wiring for different application.
	14	1st Sessional Test	
	15	**Unit-3 Estimating and Costing:** Domestic Installation :Basic Overview	
	16	Standard practice as per IS and IE rules	
5th	17	Planning of circuits, sub-circuits and Position of different accessories.	Revision and File Checking
	18	Numerical practice for planning of sub-circuits (including wiring schemes)	
	19	Electrical layout of single storey and multi-storey buildings having similar electrical load	
	20	Preparing estimates including cost as per schedule rate pattern and actual market rate. (single storey and multi-storey buildings having similar electrical load)	

6th	21	Numerical practice and taking doubts related to cost estimation for wiring of single storey and multi-storey buildings.	Viva Voce related to 2nd experiment.
	22	Industrial installations: relevant IE rules and IS standard practices.	
	23	Planning, designing and estimation of installation of single phase motors of different ratings.	
	24	Electrical circuit diagram and starters, Preparation of list of materials	
7th	25	Estimating and costing exercises on workshop with singe-phase, 3- phase motor load and the light load (3-phase supply system).	3. Prepare an estimate for two room building as per given below.
	26	Numerical practice for estimating cost of wiring for single phase motors of different ratings.	
	27	Taking doubts related to cost estimation for wiring of single phase and three phase motors of different ratings.	
	28	Service line connections: Over-head and underground connections from pole to energy meter.	
8th	29	Types of Service Connections	Revision and File Checking
	30	Service line connections estimate for domestic	
	31	Service line connections estimate for industrial	
	32	Revision and Assignment	
9th	33	Exercises related to Estimate and Costing	Viva voce related to 3rd experiment.
	34	2nd Sessional Test	
	35	**Unit-4 Estimating Materials Required:** Estimating the material required for transmission lines (overhead and underground) planning	
	36	Estimating the material required for distribution lines (overhead and underground) planning	
10th	37	Designing of lines with different fixtures, Earthing of lines (based on unit cost calculations)	4. Prepare an estimate for service connection for residential building having connected load.....KW.
	38	Substation: Types of sub-stations, Substation schemes and components	
	39	Estimate of 11/0.4 KV pole mounted sub-station up to 200 KVA rating	
	40	Methods of earthing of substations	
11th	41	Key Diagram of 66 KV/11KV, 11 KV/0.4 KV sub-stations.	Revision and File Checking
	42	Outdoor and indoor sub-stations.	
	43	Single line diagram and layout sketching of outdoor, indoor 11kV, 33kV sub-station.	
	44	Continue Single line diagram and layout sketching of outdoor, indoor 11kV, 33kV sub-station	

12th	45	Taking doubts related to indoor and outdoor sub-stations and Assignments.	Viva voce related to 4th experiment.
	46	**Unit-5 Preparation of Tender Documents:** Introduction and Overview.	
	47	Tenders – its constituents, finalization and specimen tender.	
	48	Exercise 1- Preparation of tender documents	
13th	49	Exercise 2- Preparation of tender documents	5. Visit a nearby substation and list the components with diagram.
	50	Exercise 3- Preparation of tender documents	
	51	Taking doubts related to tender documents.	
	52	Assignment and viva voce of above chapter, Note Book Checking	
14th	53	3rd Sessional Test	Revision and File checking related to Substation accessories report
	54	Revision of Chapter 1 and 2	
	55	Revision of Chapter 3	
	56	Revision of Chapter 4	
15th	57	Revision of Chapter 5	Viva Voce of above experiments.
	58	Taking doubts	
	59	**Test of Complete syllabus**	
	60	Discussion related to Estimate and Costing with students.	