Lesson Plan

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| **Name of Faculty** | | | Sh. Lalit Prakash | | |
| **Discipline** | | | Electrical Engineering | | |
| **Semester** | | | 4th | | |
| **Subject** | | | Estimating and costing in Electrical Engineering | | |
| **Lesson Plan Duration** | | | From Feb2024 to June2024 | | |
| **Work load (Theory + Practical) Per Week** | | | [03+02] | | |
| **We ek** | **Day** | **Theory Topic/ Assignment/ Test** | | **Practic al Day** | **Topic** |
| 1st | 1 | **1 Introduction** | | Day1 | Framing of Tender and reply to tender to get job/project |
| 2 | Purpose of estimating and costing | |
| 3 | Performa for making estimates | |
| 4 | Preparation of materials schedule, Costing, price list | |
| 2nd | 1 | Preparation of tender document, Net price list | | Day1 | Identification of wiring for different applications |
| 2 | Market survey, Overhead charges | |
| 3 | Labour charges, EPM and FPM, | |
| 4 | Contingency, Profit | |
| 3rd | 1 | Purchase system, Enquiries, | | Day1 | Practical Quiz No.1/ Revision and file checking |
| 2 | Comparative statements, Payment of bills | |
| 3 | orders for supply | |
| 4 | Assignment /revision of unit 1st | |
| 4th | 1 | Class Test (1st unit) | | Day1 | Prepare an estimate for a Two room residential building as per given plan |
| 2 | **Unit-2:Types of wiring**: Cleat, batten | |
| 3 | Casing capping and conduit wiring | |
| 4 | Comparison of different wiring systems | |
| 5th | 1 | Design of wiring schemes for particular situation of domestic and industrial installation. | | Day1 | Practical Quiz No.2/ Revision and file checking |
| 2 | Wiring accessories used for Electrical Installation Use of protective devices i.e. MCB | |
| 3 | ELCB ,Use of wire-gauge and table | |
| 4 | Revision/ queries of unit-2 | |
| 6th | 1 | Tentative 1stsessional test | | Day1 | Prepare an estimate for service connection for residential building having connected load - kW |
| 2 | Evaluation of sessional marks etc. Display and analysis of sessional marks | |
| 3 | **Unit-3** Domestic installations | |
| 4 | Electrical layout of Domestic Installation | |
| 7th | 1 | Standard practice as per IS and IE rules, Planning of circuits, sub circuits | | Day1 | Practical Quiz No.3/ Revision and file checking |

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|  | 2 | Industrial installations Position of different accessories |  |  |
| 3 | Preparing estimates including cost as per |
| 4 | schedule rate pattern and actual market rate |
| 8th | 1 | Industrial Installation : Planning of installation for single phase, Motors of different rating | Day1 | Mid-term Viva—voce and practical assessment |
| 2 | Designing for single phase motors of different ratings |
| 3 | Electrical circuit diagram for Industrial installations, |
| 4 | Starters for Industrial installations |
|  | 1 | Preparation of list of materials for Industrial installations | Day1 | Visit a nearby substation and list the components with diagram |
| 9th | 2 | Estimating and costing exercises on workshop with singe-phase motor load |  |  |
| 3 | Estimating and costing exercises on workshop with 3- phase motor load |
| 4 | and the light load |
| 10th | 1 | Service line connections estimate for domestic up to 10 KW from pole to energy meter. | Day1 | Assignments and quiz/class tests |
| 2 | Service line connections estimate for Industrial loads up to 20 KW over-head |
| 3 | & underground connection from pole to energy meter |
| 4 | Class test /assignment 3rd unit |
| 11th | 1 | Problem solving/checking | Day1 | Laboratory and practical work drawing single and wiring diagram |
| 2 | **Unit 4thEstimating Materials Required**Transmission and distribution lines |
| 3 | overhead planning and designing of lines |
| 4 | with different fixtures based on unit cost calculations |
| 12th | 1 | Types of substations, | Day1 | Viva—voce/class test |
| 2 | substation schemes |
| 3 | and components |
| 4 | Estimate of 11/0.4 KV pole mounted substation up to 200 KVA rating |
| 13th | 1 | Methods of earthling of substations | Day1 | Practical Quiz / Revision and file checking |
| 2 | Key Diagram of 66 KV/11KV |
| 3 | Key Diagram of 11 KV/0.4 KV Substation |
| 4 | Problem solving/checking |

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| 14th | 1 | Single line diagram, | Day1 | Practical Quiz / Revision and file checking |
| 2 | layout sketching of outdoor, |
| 3 | indoor 11kV sub-station |
| 4 | Single line diagram, |
| 15th | 1 | layout sketching of outdoor | Day1 | Internal practical evaluation |
| 2 | indoor 33kV substation |
| 3 | Class test /assignment 4th unit |
| 4 | Problem solving/checking |
| 16th | 1 | **Unit-5: Preparation of Tender Documents** |  |  |
| 2 | Tender – constituents finalization, specimen tender |  |  |
| 3 | HSBTE old Question paper solution |  |  |
| 4 | HSBTE old Question paper solution |  |  |