

**“PVC” NSSK Govt. Polytechnic Bilaspur at Kalol (H.P.)**  
**Lesson Plan (Theory)**

Branch : Electrical Engg.

Semester: 6<sup>th</sup>

Subject : Building Electrification.

Session: Jan. 2025 – Jun 2025

Teacher : Ashwani Kumar

Class Room: L-5

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Rem.
1	13	<b>Wiring Accessories</b>	Switch – Their types according to construction such as surface switch, flush switch, and pull switch, rotary switch, knife switch, pendent switch, Main-switch (ICDP, ICTP). Holders- Their types such as bayonet cap lamp holder, pendent holder, batten lamp holder, angle holder, bracket holder, tube light holder, screw type Edison and goliath Edison lamp holder, swivel lamp holder. Socket outlets and plugs- two pin, three-pin, multi pin sockets, two-pin and three-pin plug.	R1,R2,R3	
2	13	<b>Electrical Wires and Underground Cable</b>	Conductors: - (Definitions only) wire, cable, bus bar, stranded conductor, cable, armoured cable, flexible cable, solid conductor, PVC wires, CTS wire, LC wire, FR (Fire retardant) wire, Size of wire according to BIS. Tools used for measurement of wire size. Classification of cables (brief introduction) - low tension, high tension, and extra high-tension cables, solid, oil filled and gas filled type. Cable insulation materials (brief introduction) - vulcanized rubber (VIR), polyvinyl chloride (PVC), cross linked polythene (XLPE), impregnated paper.	-do-	
3	16	<b>Wiring Methods and wiring layout</b>	Factors determining the selection of wiring methods. Conduit wiring- Types of conduit, comparison between Metal and PVC conduit, types of conduit wiring (Surface/Concealed). Comparison of various wiring system. Design, working and drawing of following electrical circuits: Simple light and fan circuits, Stair case wiring, Bedroom lighting circuit, Corridor lighting circuit.	-do-	
4	16	<b>Residential Building Electrification</b>	Difference between residential and industrial load. Lighting and power circuits: Light and fan circuit, Power circuit Wiring and circuit Schematic diagrams: multiline and single line representation Load assessment: Selection of size of conductor, Selection of rating of main switch and protective switch gear. Design and drawing, estimation and costing of a residential installation having maximum 5 KW load; Sequence to be followed for preparing estimate; Calculation	-do-	

of length of wire and other materials, labour cost. Calculation of Material required for service connection.


5

13


**Illumination  
in Residential  
Installation**

Definition: Luminous flux, Luminous intensity, Lumen, Illumination or illuminance, Lux, Space-height ratio, utilization factor, depreciation factor, luminous efficiency. Laws of Illumination-Inverse Square Law, Cosine Law. Factors affecting the illumination, Luminous flux of different types of light sources, Lux level required for different places.

Signature of Teacher with Date

  
27/01/25

Signature of HOD (EE)



Teaching Resources:

- R1. Raina, K.B. and S.K.Bhattacharya, Electrical Design Estimating and Costing, New Age International Ltd., New Delhi.
- R2. Allagappan, N. S. Ekambarram, Electrical Estimating and Costing, New Delhi.
- R3. Singh, Surjit, Electrical Estimating and Costing, Dhanpat Rai and Co. New Delhi.

PVC" NSSK Govt. Polytechnic Bilaspur at Kalol (H.P.)  
Practical Planning & Coverage

Branch : Electrical Engg.

Semester: 6th

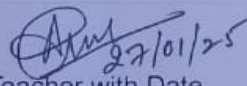
Subject: Buuilding Electrification Lab


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Lab:

Pract. No.	Description of Practical	Reference for Procedure/ Writeup	Likely Dates	Actual Dates	Sign.
1.	Prepare series testing board	Lab Manual			
2.	Select the electric wire using measuring and testing instruments for particular applications.	Lab Manual			
3.	Identify cables of different current ratings.	Lab Manual			
4.	Identify different Cable insulation materials (brief introduction) - vulcanized rubber (VIR), polyvinyl chloride (PVC), cross linked polythene (XLPE), impregnated paper used in various applications.	Lab Manual			
5.	Control one lamp from two different places using PVC surface conduit wiring system.	Lab Manual			
6.	Design 2 BHK residential installation scheme and estimate the material required. And draw the details required for installation on A4 size sheet.	Lab Manual			
7.	Identify and study different types of light sources and their Luminous flux.	Lab Manual			

  
Signature of Teacher with Date

  
Signature of the HOD (EE)