

Govt. Polytechnic Hamirpur (H.P.)
Lesson Planning (Theory)

Branch : Electrical Engg.

Semester : 6th

Subject : Building Electrification

Session : Jan-May 2026

Teacher: Parveen Dogra

Sr. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1.	1-16	Unit – I Wiring Accessories	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,R4,R5,R6	
2.	17-32	Unit – II Electrical Wires and Underground Cables	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.	33-50	Unit– III Wiring Methods and wiring layout	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.	51-68	Unit– IV Residential Building Electrification	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 of length of wire and other materials, labour cost. Calculation of Material required for service connection.	-do-	
5.	69-84	Unit– V 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.	-do-	

Parveen
27.01.26

Signature of Teacher with Date

Reference Resource:

R1: Raina, K.B.; Dr. S. K. Bhattacharya New Age International Publisher First, Reprint 2010, Electrical Design Estimating and Costing ISBN: 978-81-224-0363-3

R2. Allagappan,, N. S. Ekambarram, Tata Mc-Graw Hill Publishing Co. Ltd, Electrical Estimating and Costing, ISBN 13: 9780074624784.

R3. Singh, Surjit Ravi Deep Singh, Dhanpat Rai and Sons, Electrical Estimating and Costing, ISBN 13:1234567150995

R4. Gupta, J.B. S.K. Kataria and Sons Reprint Edition, A Course in Electrical Installation Estimating and Costing ISBN 10: 935014279113: 978-9350142790.

R5. Bureau of Indian Standard. IS: 732-1989, Code of Practice for Electrical Wiring Installation R6. Bureau of Indian Standard. SP-30:2011, National Electrical Code 2011

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Signature of HOD (EE)

Govt. Polytechnic Hamirpur (H.P.)

Practical Planning & Coverage

Branch : Electrical Engg

Semester : 6th

Subject : Building Electrification

Session : Jan-May 2026

Teacher: Parveen Dogra

Laboratory:

Practical No.	Description of Practical	Reference for Procedure/ Writeup	Likely Dates	Actual Dates	Sign
1	Prepare series testing board.	Lab Manual	G ₁ 28.01.26 G ₂ 31.1.26		
2.	Select the electric wire using measuring and testing instruments for particular applications.	Lab Manual	G ₁ 4.2.26 G ₂ 7.2.26		
3.	Identify cables of different current ratings.	Lab Manual	G ₁ 11.2.26 G ₂ 21.2.26		
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	G ₁ 18.2.26 G ₂ 28.2.26		
5	Control one lamp from two different places using PVC surface conduit wiring system	Lab Manual	G ₁ 25.2.26 G ₂ 7.3.26		
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	G ₁ 11.3.26 G ₂ 28.3.26		
7	Identify and study different types of light sources and their Luminous flux.	Lab Manual	G ₁ 18.3.26 G ₂ 4.4.26		

Parveen Dogra
27.01.26

Signature of Teacher with Date

(Signature)

Signature of H.O.D.

Govt. Polytechnic, Hamirpur (H.P.)

Lesson Planning (Theory)

Branch: ELECTRICAL ENGG.

Semester : 6th

Subject : Indian Constitution

Course Code: AU 302

Teacher: Devender Kumar, Sr. Lect. EE

Class Room:

S. No.	No. of Lect ures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	6	Introduction to Constitution	History of making of the Indian Constitution, Meaning and importance of the Constitution, Salient features and Preamble of Indian Constitution, Fundamental rights-meaning and limitations, Directive principles of state policy and Fundamental duties -their enforcement and their relevance.	R1 R2 R3	
2	8	Union Government	Structure of Union Government, Union Executive-President, Vice-president, Prime Minister, Council of Ministers, Union Legislature- Parliament and Parliamentary proceedings, Union Judiciary-Supreme Court of India – composition and powers and function.	R1 R2 R3	
3	10	State and Local Governments	Structure of State Government, State Executive- Governor, Chief Minister, Council of Ministers, State Legislature-State Legislative Assembly and State Legislative Council, State Judiciary-High court, Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special reference to 74th Amendment.	R1 R2 R3	
4	4	Election provisions, Emergency provisions, Amendment of the constitution	Election Commission of India-composition, powers and functions and electoral process, Types of emergency-grounds, procedure, duration and effects, Amendment of the constitution- meaning, procedure and limitations.	R1 R2 R3	

REFERENCE RESOURCES:

- R-1: Introduction to the Constitution of India” by M.V. Pylee, 4th Edition, Vikas publication, 2005
- R-2: Ethics and Politics of the Indian Constitution by Rajeev Bhargava, Oxford University Press, New Delhi 2008
- R-3 : Internet


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Govt. Polytechnic, Hamirpur (H.P.)

Lesson Planning (Theory)

Branch: ELECTRICAL ENGG.

Semester : 6th

Subject : Entrepreneurship & Start Ups

Course Code: HS 302


Teacher: Devender Kumar, Sr. Lect. EE

Class Room:

S. No.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	10	Introduction to Entrepreneurship and Start – Ups	Definitions, Traits of an entrepreneur, Intra-premiership, Motivation, Types of Business Structures, Similarities/ differences between entrepreneurs and managers, Revision and discussion.	R1 R3	
2	8	Business Ideas and their implementation	Discovering ideas and visualizing the business , Activity map, Business Plan, Revision and discussion.	R1 R3	
3	12	Idea to Start-up	Market Analysis – Identifying the target market, Competition evaluation and Strategy Development, Marketing and accounting, Risk analysis, Revision and discussion.	R1 R3	
4	11	Management	Company's Organization Structure, Recruitment and management of talent, Financial organization and management, Revision and discussion.	R1 R3	
5	9	Financing and Protection of Ideas	Financing methods available for start-ups in India, Communication of Ideas to potential investors – Investor Pitch, Patenting and Licenses, Revision and discussion.	R1 R2 R3	
6	6	-	Exit strategies for entrepreneurs, bankruptcy, and succession and harvesting strategy, Revision and discussion.	R2 R3	

REFERENCE RESOURCES:

- R-1: The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company by Steve Blank and Bob Dorf
- R-2: Demand: Creating What People Love Before They Know They Want It by Adrian J. Slywotzky With Karl Weber
- R-3 : Internet


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Govt. Polytechnic Hamirpur (H.P.)

Lesson Planning (Theory)

Branch : ELECTRICAL ENGG
 Subject : OFT
 Teacher: ANIL KUMAR JAGOTA

Semester: 6th
 Session: Jan –June 2026
 Class Room: EBL-2

S.N o.	No. of Lectures	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	1-6	Introduction to Optical Fibre Technology	1.1 Introduction to Optical Fibres 1.2 Types of Optical Fibres on the basis of refractive index profile & on the basis of modes 1.3 Advantages and Limitations of Optical Fibres	R1,R2	
2	7-18	Optical Fibre Characteristics	2.1 Attenuation and Dispersion in Optical Fibres, 2.2 Numerical Aperture and Acceptance Angle 2.3 Optical Fibre Modes	R1,R2	
3	19-38	Fibre Optic Communication Systems	3.1 Working principle of Optical Sources (LED, LASER DIODE), 3.2 Working principle of Detectors (PIN TYPE, AVALANCHE TYPE) 3.3 Block diagram of Fibre Optic Transmitters and Receivers 3.4 Modulation Techniques (ASK, FSK) 3.5 Multiplexing Techniques (TDM, WDM)	R1,R2	
4	39-44	Fibre Optic Sensors	4.1 Types of Fibre Optic Sensors 4.2 Principle of Operation of fabry-perot interferometer (fpi) sensor & fiber optic gyroscope (fog) sensor	R1,R2	
5	45-51	Optical Amplifiers	5.1 Types of Optical Amplifiers 5.2 Working principle of EDFA 5.3 Working principle of SOA	R1,R2	
6	52-56	Fibre Optic Networks	6.1 Classification of optical networks 6.2 Hybrid Fibre-Coaxial (HFC) Network 6.3 Passive Optical Network (PON) 6.4 SONET/SDH 6.5 OTDR method of	R1,R2	

REFERENCE RESOURCES

- R1 - J. M. Senior, Optical Fiber Communications, Pearson Education, 2010
 R2 - G. P. Agrawal, Fiber Optic Communication Systems, John Wiley & Sons, 2002

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