

Lesson Plan

Name of Faculty	Deepa Kapoor	
Discipline	Electrical Engineering	
Semester	5 th	
Subject	Life Skills for Professional and Personal Life (L-4Hrs. /Week)	
Lesson Plan Duration	August – December 2026	
Week	Topic	Theory
1st (6Aug.-13 Aug.)	1.Life Skills,Soft Skills& Interpersonal Skills.	1. Definition of life Skills and Soft Skills. 2. Significance of Life Skills and Soft Skills in personal and professional Life. 3.Types of Life Skills and Soft Skills, ways to develop soft skills and life skills. 4. Concept of interpersonal skills and tips to improve interpersonal skills. 5. Meaning of team dynamics and tips for improving team dynamics.
2nd(14Aug.-21Aug.)	1.Communication Skills,	1. Meaning of communication skills 2. Significance and characteristics of assertive communication. 3. Techniques of assertive communication. 4. Tips to develop assertive communication.
3rd(22Aug.-28Aug.)	Life Skills	(A)Self Awareness: 1. Self introspection: (a) Meaning of self awareness.introspection, self reflection and insight. (b) Strategies to improve self awareness. (c) Importance of counselling and coaching.
4th(29 Aug. – 05 Sept.)	Life Skills	2.Stress Management. (a) Meaning of stress (b) Factors causing positive and negative type of stress. (c) Effects of stress on mind and body. (e) Stress management techniques.
5th(7Sep.-14Sep.)	Life Skills	Emotional Intelligence: (a) Meaning and significance of EI. (b) Strategies to develop and enhance emotional intelligence.
6th(15Sep. – 21Sep.)	Life Skills	Self Esteem: (a) Concept meaning and significance of self esteem. (b) Type of self esteem. (c) Characteristics of people with high and low self esteem. (d) Steps and tips for improving self esteem.
7th(22 Sep.– 28 Sep.)	Life Skills	(B)Social Awareness: 1. Meaning and techniques of social awareness and social skills. 2. Empathy: (a)Meaning and types of empathy. (b) Benefits of empathy. (c)Steps for developing empathy.
8th(29Sep.- 06 Oct.)	Life Skills	3.Compassion: (a) Meaning and benefits of compassion. (b) Steps to practice compassion.
9th(07Oct. – 14Oct.)	Life Skills	4.Body Language: (a)Elements of body language. (b)Develop positive body language that helps in building positive relationship. (c) Avoiding negative body language.
10th(05 Oct. – 22Oct.)	Life Skills	(C)Thinking Skills: 1.Positive Thinking. (a)Meaning and benefits of positive thinking. (b) Tips to develop positive attitude and practice positive thinking. 2. Listening Skills: (a)Concept, significance and process of listening skills. (b) Kinds of listening Skills. (c) Factors hindering effective listening. (d)Tips for active and empathetic listening.
11th(23 Oct.-30 Oct.)	Life Skills	3. Resilience: (a) Meaning and types of resilience. (b) Case study of resilience.
12th(31 Oct. – 10 Nov.)	Time Management	1. Concept and significance of time management. 2. Benefits of time management. 3. Tools and techniques of timemanagement. 4. How to over come procrastination and avoid time-wasters.
13th(11Nov. – 18 Nov.)	Human Values and Ethics	1. Meaning of human values,morals and ethics. 2. What is values and types of values. 3.Human Dignity: Meaning of human dignity and fundamental rights of person,meaning of humility,significance of humility, developing and cultivating humility.
14th(19Nov. – 28 Nov.)	Revision	Revision

Signature of Subject Teacher

Deepa Kapoor

Revision

Signature of HOD/OIC

Government Polytechnic Banikhet, Distt. Chamba H.P.

Department of Electrical Engineering

Lesson Plan

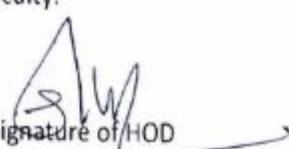
Name of Faculty	Er. Divya
Discipline	Electrical Engineering
Semester	5 th
Subject	SG&P (L-5 Hrs./Week)
Lesson Plan Duration	August – Nov. 2026

Week	Topic	Theory
1 st (06 Aug. – 14Aug.)	Unit – I Basics of Protection	Necessity, functions of protective system, Normal and abnormal conditions
2 nd (17Aug. – 22Aug.)	Unit – I Basics of Protection	Types of faults and their causes. Protection zones and backup protection
3 rd (24Aug. – 29Aug.)	Unit – II Circuit Interruption Devices	Isolators - Vertical break, Horizontal break and Pantograph type. HRC fuses – Construction, working, characteristics and applications
4 th (31Aug– 05 Sept.)	Unit – II Circuit Interruption Devices	Arc formation process, methods of arc extinction (High resistance and Low resistance), Arc voltage, Recovery voltage, Re-striking voltage, RRRV.
5 th (07Sept. – 11 Sept.)	Unit – II Circuit Interruption Devices	HT circuit breakers: Sulphur-hexa Fluoride (SF ₆), Vacuum circuit breaker – (Working, construction, specifications and applications). L.T. circuit breaker: Air circuit breakers (ACB),
Class Test – 1		In Second Week of September
6 th (14 Sept. – 19Sept.)	Unit – II Circuit Interruption Devices	Miniature circuit breakers (MCB), Moulded case circuit breakers (MCCB) and Earth leakage circuit breaker (ELCB) - Working and applications. Brief introduction to gas insulated switchgear.
7 th (21 Sept. – 26 sept)	Unit– III Protective Relays	Fundamental quality requirements: Selectivity, Speed, Sensitivity, Reliability, Simplicity, Economy. Basic relay terminology - Protective relay, Relay time, Pick up, Reset current, current setting, Plug setting multiplier, Time setting multiplier
8 th (28 Sept. – 03 Oct.)	Unit– III Protective Relays	Protective relays: Classification, principle of working, construction and operation of – Electromagnetic attraction (Attracted armature type, Solenoid type and Watt-hour meter type only) relays. Electromagnetic Induction relays: Over current relays: Block diagram, working.

9 th (05 Oct. – 09 Oct.)	Unit– III Protective Relays	Distance relaying- Principle, operation of Definite distance relays. Directional relay: Need and operation. Operation of current and voltage differential relay. Brief introduction to Thermal Relay. Brief introduction to Static and Microprocessor based relays and their applications.
Class Test – 2		In Second Week of October
10 th (12 Oct. – 17 Oct.)	Unit– IV Protection of Alternator and Transformer Alternator Protection	Alternator Protection: Faults, Differential protection over current, earth fault, overheating and field failure protection. Reverse power protection.
11 th (19 Oct. – 24 Oct.)	Unit– IV Protection of Alternator and Transformer Alternator	Transformer Protection Different Faults (brief introduction), Differential, over current, earth fault, over heating protection.
12 th (27 Oct. – 31 Oct.)	Unit– IV Protection of Alternator and Transformer Alternator	Limitations of differential protection. Buchholz relay: Construction, operation, merits and demerits.
House Test		In First Week of November
13 th (09 Nov- 13 Nov)	Unit– V Protection of Motors, Bus-bar and Transmission Line Motor	Motors Faults, Short circuit protection, Overload protection, Single phase preventer
14 th (16 Nov- 21 Nov)	Unit– V Protection of Motors, Bus-bar and Transmission Line Motor	Bus bar and Transmission line Faults on Bus bar and Transmission Lines. Bus bar protection: Differential and Fault bus protection. Transmission line: Over current, Distance and Pilot wire protection.
15 th (23 Nov- 28 Nov)		Revision

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Signature of Teacher/Prepared by
(Er. Divya)


Signature of HOD

Government Polytechnic Banikhet, Distt. Chamba H.P.

Department of Electrical Engineering

Lesson Plan

Name of Faculty	Er. Jyoti Verma
Discipline	Electrical Engineering
Semester	5th
Subject	EC&A(L-5 Hrs./Week)
Lesson Plan Duration	August – December 2026

Week	Topic	Theory
1 st (06 Aug. –14 Aug.)	Unit – I Energy Conservation Basics	Energy Scenario: Primary and Secondary Energy, Energy demand and supply, National scenario. Energy conservation
2 nd (17 Aug. – 22 Aug.)	Unit – I Energy Conservation Basics	Energy audit; concepts and difference Star Labelling: Need and its benefits
3 rd (24 Aug. – 29 Aug.)	Unit – II Energy Conservation in Electrical Machines	Need for energy conservation in induction motor. Energy conservation techniques in induction motor by: Motor survey Matching motor to load
4 th (31 Aug– 05 Sept.)	Unit – II Energy Conservation in Electrical Machines	Operating in star mode. Rewinding of motor. Replacement by energy efficient motor, Periodic maintenance
5 th (07 Sept. –11 Sept.)	Unit – II Energy Conservation in Electrical Machines	Energy efficient motor; significant features, advantages, applications and limitations. Need for energy conservation in transformer: Energy efficient transformers, amorphous transformers; epoxy Resin cast transformer / Dry type of transformer
Class Test – 1		In Second Week of September
6 th (14 Sept. – 19 Sept.)	Unit– III Energy conservation in Electrical Installation systems	Aggregated Technical and commercial losses (ATC); Power system at state, regional, national and global level. Technical losses; causes and measures to reduce these (no expression only theory part) a) Controlling I ² R losses
7 th (21 Sept. – 26 sept)	Unit– III Energy conservation in Electrical Installation systems	b) Optimizing distribution voltage c) Balancing phase currents Energy conservation in lighting sources:
8 th (28 Sept. – 03 Oct.)	Unit– III Energy conservation in Electrical Installation systems	a) Replacing Lamp sources. b) Using energy efficient luminaries

9 th (05 Oct. – 09 Oct.)	Unit– IV Energy conservation through Cogeneration and Tariff	Co-generation and Tariff; concept, significance for energy conservation Co-generation Types of cogenerations on basis of sequence of energy use (basic introduction to Topping cycle & Bottoming cycle)
Class Test – 2		In Second Week of October
10 th (12 Oct. – 17 Oct.)	Unit– IV Energy conservation through Cogeneration and Tariff	Types of cogeneration basis of technology (Steam turbine cogeneration, Gas turbine cogeneration). Factors governing the selection of cogeneration system, advantages of cogeneration.
11 th (19 Oct. – 24 Oct.)	Unit– IV Energy conservation through Cogeneration and Tariff	Tariff: Types of tariff structure: Special tariffs; Time-off-day tariff, Peak-off-day tariff, Power factor tariff, Maximum Demand tariff, Load factor tariff. Application of tariff system to reduce energy bill.
12 th (27 Oct. – 31 Oct.)	Unit– V Energy Audit of Electrical System	Energy audit (definition as per Energy Conservation Act)Energy audit instruments and their use
House Test		In First Week of November
13 th (09 Nov- 13 Nov)	Unit– V Energy Audit of Electrical System	Questionnaire for energy audit projects.
14 th (16 Nov- 21 Nov)	Unit– V Energy Audit of Electrical System	Energy flow diagram (Sankey diagram), Revision
15 th (23 Nov- 28 Nov)	Revision	Revision & doubt clearance

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Signature of Teacher
(Er. Jyoti Verma)


HOD EE

Department of Electrical Engineering**Lesson Plan**

Name of Faculty	Er Divya
Discipline	Electrical Engineering
Semester	5th
Subject	Industrial Instrumentation & Conditioning monitoring (L-5Hrs./Week)
Lesson Plan Duration	August – December 2026

Week	Topic	Theory
1 st (06 Aug. – 14 Aug.)	Unit – I Fundamentals of instrumentation	Basic purpose of instrumentation. Basic block diagram (transduction, signal conditioning, signal presentation) and their function
2 nd (17 Aug. – 22 Aug.)	Unit – I Fundamentals of instrumentation	Brief introduction to switching devices- Push button, limit switch, float switch, pressure switch, thermostat, electromagnetic relay
3 rd (24 Aug. – 29 Aug.)	Unit – II Transducers	Distinguish between Primary and Secondary, Electrical and Mechanical, Analog and Digital, Active and Passive. Mechanical devices pry. And sec. transducers Advantages of electric transducers
4 th (31 Aug – 05 Sept.)	Unit – II Transducers	Required characteristics of transducers. Factors affecting the choice of transducers Brief introduction to resistive transducers.
5 th (07 Sept. – 11 Sept.)	Unit – II Transducers	Brief introduction to Inductive transducers. Applications of transducers.
Class Test – 1		In Second Week of September 2026.
6 th (14 Sept. – 19 Sept.)	Unit– III Signal Conditioning	Basic Concept of signal conditioning System. Draw pin configuration of IC 741. Define Ideal OP-AMP and Electrical Characteristics of OP-AMP
7 th (21 Sept. – 26 sept)	Unit– III Signal Conditioning	Different Parameters of op-amp:-Input offset voltage, Input offset current, Input bias current, Differential input resistance, CMMR, SVRR,
8 th (28 Sept. – 03 Oct.)	Unit– III Signal Conditioning	voltage gain, output voltage, slew rate, gain bandwidth, Output, short circuit current.
	Unit– IV Data Acquisition System	Generalized DAS- Block diagram and description of Transducer, signal conditioner, multiplexer, converter and recorder

9 th (05 Oct. – 09 Oct.)	Unit– IV Data Acquisition System	Draw Single Channel and Multi-channel DAS- Block diagram only. Difference between Signal Channel and Multi-Channel DAS. Data conversion- Construction and Working of Analog to digital conversion- successive approximation method
Class Test – 2		In 2 nd Week of October 2026.
10 th (12 Oct. – 17 Oct.)	Unit– IV Data Acquisition System	Digital to Analog conversion- Construction and Working of binary weighted resistance method. Concept and methods of data transmission of electrical and electronic transmission.
11 th (19 Oct. – 24 Oct.)	Unit– V Condition Monitoring and Diagnostic Analysis	Definition of condition monitoring Insulation deterioration Mechanism- factors affecting occurrence and rate of deterioration,
12 th (27 Oct. – 31 Oct.)	Unit– V Condition Monitoring and Diagnostic Analysis	types of stresses responsible for deterioration . Different tests on transformer,
House Test		In 1 st Week of November 2026
13 th (09 Nov- 13 Nov)	Unit– V Condition Monitoring and Diagnostic Analysis	their purpose, and the necessary condition of machine. Tests on Circuit breaker, purpose and required condition of machine.
14 th (16 Nov- 21 Nov)	Unit– V Condition Monitoring and Diagnostic Analysis	Tests on Circuit breaker, purpose and required condition of machine.
15 th (23 Nov- 28 Nov)	Revision	Revision & doubt clearance

NOTE: Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Signature of Teacher/Prepared by
(Er. Divya)

Signature of HOD
(Er. Amit Attri)

R.G.Government Polytechnic Banikhet, Distt. Chamba H.P-176303

Department of Electrical Engineering

Lesson Plan

Name of Faculty	Bhupeder Singh Thakur
Discipline	Electrical Engineering
Semester	5 th
Subject	IEC (L-4 Hrs./Week)
Lesson Plan Duration	August – December 2026

Week	Topic	Theory
1 st (06Aug.-08Aug.)	Unit – I Introduction to Industrial Automation	Automation: Need and benefits.
2 nd (09Aug. – 15Aug.)	Unit – I Introduction to Industrial Automation	Types of automation system: Fixed, Programmable, Flexible, Brief introduction to different systems used for Industrial automation
3 rd (16Aug. – 22Aug.)	Unit – I Introduction to Industrial Automation	PLC, HMI, SCADA, DCS, Drives. Evolution of PLC.
4 th (23Aug– 29 Aug.)	Unit – II PLC Fundamentals	Building blocks of PLC: CPU, Memory organization, Input- output modules (discrete and analog),
5 th (30Aug –05 Sept.)	Unit – II PLC Fundamentals	Specialty I/O Modules, Power supply Fixed and Modular PLC and their types,
6 th (06 Sept. – 12Sept.)	Unit– III PLC Programming and Applications	Redundancy in PLC module I/O module selection criteria PLC I/O addressing
Class Test – 1		In 2 nd Week of September
7 th (13 Sept. – 19 sept)	Unit– III PLC Programming and Applications	PLC programming Instructions: Relay type instructions, Timer instructions: On delay, off delay, retentive, counter instructions: Up, Down, High speed,
8 th (20 Sept. – 26Sept.)	Unit– III PLC Programming and Applications	Logical instructions, Comparison Instructions, Data handling Instructions, Arithmetic instructions. PLC programming language: Functional Block Diagram (FBD), Instruction List. Structured text, Sequential Function Chart (SFC), Ladder Programming.
9 th (27Sept. – 03 Oct.)	Unit– III PLC Programming and Applications	PLC Based Applications: Motor sequence control, Traffic light control, Elevator control, Tank Level control, Conveyor system, Stepper motor control.

10 th (04 Oct. – 10 Oct.)	Unit– IV Electric Drives and special machines	Electric drives: Types, functions, characteristics, four quadrant operation.
Class Test – 2		In 2 nd Week of October
11 th (11 Oct. – 17 Oct.)	Unit– IV Electric Drives and special machines	DC and AC drive controls: V/F control, Parameters, direct torque control, Applications- Speed control of AC motor /DC Motor.
12 th (18 Oct. – 24 Oct)	Unit– V Supervisory Control and Data Acquisition System (SCADA)	Introduction to SCADA: Typical SCADA architecture/block diagram, Benefits of SCADA
13 th (25 Oct. – 31 Oct)	Unit– V Supervisory Control and Data Acquisition System (SCADA)	Interfacing SCADA system with PLC: Typical connection diagram, Object Linking & embedding for Process Control (OPC) architecture, Steps in Creating SCADA Screen for simple object,
House test		In 1 st Week of November.
14 th (8 Nov. – 14 Nov.)	Unit– V Supervisory Control and Data Acquisition System (SCADA)	Steps for Linking SCADA object (defining Tags and Items) with PLC ladder program using OPC
15 th (15 Nov- 21 Nov)	Unit– V Supervisory Control and Data Acquisition System (SCADA)	Applications of SCADA: Traffic light control, water distribution, pipeline control.
16 th (22 Nov- 28 Nov)		Revision

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Signature of Teacher
B. S. Thabur


Signature of HOD