

**LESSON PLAN**

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
August	August	Week 2	4,5,6	Unit-I: Introduction	Design considerations, design procedure, Basic requirements	
		Week 3	11,12		classifications of design and principles of good economic design	
		Week 4	18,19,22,23		Standardization, Interchangeability of Automobile parts with reference to IS specifications,	
		Week 5	25,26,29,30		Limits, fits and tolerances.	
		week 1	1,2,5,6	Unit-II: Design of keys, couplings and Engine Parts	Concept of Sunk Keys, Rectangular Keys, Square, Parallel, Crosshead,	
		week 2	8,9,12		Woodruff Key Design of rectangular key, Coupling: Flange coupling, Muff coupling,	
		week 3	15,16,19,20		Clamp coupling, Engine Parts: Cylinder liner and cylinder head, Piston, Connecting Rod, Clutch- Single Plate and Multi plate Clutch, Brakes- Internal Expanding shoe brake.	
	September	week 4	22,23,26,27	Unit-III Simple Mechanism	Definition of link, kinematic pair, kinematic chain, Mechanism, inversions and machines	
		Week 1	3,4,		Simple examples of mechanism with: Lower pairs, Four bar chain, Slider crank chain	
		Week 2	6,10		Double slider crank chain, Higher pairs	
		Week 3	13,14	Unit-IV: Motion and Turning Moment	Displacement, velocity and acceleration of piston Angular velocity and angular acceleration of connecting rod	
		Week 4	21,24,25		Calculations of piston effort and crank effort at different angles, Fly wheel: types, weight and moment of inertia,	
	October	Week 5	27,28,31		Fluctuation of energy for fly wheel, Turning moment diagrams with reference to internal combustion engines.	
November	November	Week 1	1	Unit-V: Power Transmission	Flat belt, V-belt and chain drives,	
		Week 2			House Test	
					Horse power transmitted and condition for maximum horse power transmitted Ratio of tension of two sides of the belt with and without centrifugal tension	
		Week 3	10,11,14,15		Velocity ratios transmitted by Belts, Simple, compound and Epicyclic gear box.	
		Week 4	17,18,21,22		Revision	
		Week 5	24,25			

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**LESSON PLAN**

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
	August	Week 2	4,5,7,8	Unit-I: Introduction & Batteries	Various Electrical components/systems in Automobile. Their functions and demands, earths return system, types of earthing, GV, 12V & 24V system.	
		Week 3	11,12,14		Construction, working, elements, types, materials used, electrolyte and its strength, effect of added plate area and temperature, rating, capacity, efficiency, temperature characteristics, terminal voltages, charging and discharging	
		Week 4	18,19,21,23		Battery Testing: Electrolyte testing by hydrometer, voltage test, high discharge and cadmium test (voltage), Battery Charging: Constant potential and constant current, initial charging, normal charging, trickle charging, intermittent charging, boost charging, Battery Defects: Sulphation, plates decay, working, erosion, cracking, sedimentation, separator defects, short circuits, overcharging	
		Week 5	25,26,28,30			
		Week 1	1,2,4,5		Circuits, function and various components of alternator, types, construction	
	September	Week 2	8,9,11,12	Unit-II: Charging System & Starting system	working, advantages and disadvantages of alternators, drives, cut out relay.	
		Week 3	15,16,18,19		Function of various components, torque terms, principle and constructional details of starter motor, switches, types, starter to engine drive and their types, Starter alternators	
		Week 4	22,23,25,26		Constructional details of coil, distributor, condenser, meaning of cam angle, ignition timing, ignition advancing mechanisms,	
		Week 1	3,4		centrifugal and vacuum type, transistorized ignition system, construction and working details of magneto ignition system.	
	October	Week 2	6,9	Unit-III: Ignition System	Constructional details of spark plugs, classification as per reach, heat range, diameter, and effect of leaded fuels, care and maintenance of spark plug	
		Week 3	13,14		Various lighting circuits, head lamp, type and constructional details, sealed beam, double filaments, fog light, side light, brake light, instrument light, indicator lights, reversing light	
		Week 4	21,23,25		HT and LT, their specifications, cable colour codes, wiring Harness, Wiring diagrams of cars and two wheeler, Fuses, faults and rectification.	
		Week 5	27,28,30		Fuel gauges: bimetallic and balancing coil type, Air pressure gauges, temperature gauges, warning light, wind screen wipers, horns, horn relay, electric fuel pump, Faults and rectification.	
		week 2			HOUSE TEST	
	November	week 3	10,11,13,14	Unit-V: Electrical Accessorie	Impulse Speedometer, tachometer, heaters, defrosters and Electric door locks, window actuation.	
		week 4	17,18,20,21		Principle and application of sensor in engine management: Air flow sensor, manifold pressure sensor, speed sensor, throttle position sensor, oxygen sensor, temperature sensor.	
		week 5	24,25		Revision	

*Rishu Dhiman*

*Sanjay*

**LESSON PLAN**

**Name of Teacher :- Rishu Dhiman      Subject: Two and Three Wheeler      Class: 5th Semester Automobile**

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
	August	Week 2	6,7	<b>Unit-I: Power Unit</b>	Two stroke and four stroke SI engine, merits and demerits. Symmetrical and unsymmetrical port timing diagrams.	
		Week 3	13,14		Types of scavenging process merits and demerits, scavenging efficiency. Scavenging pumps. Rotary valve engine.	
		Week 4	20,21,23	<b>Unit-II: Various System</b>	Fuel system. Lubrication system. Magneto coil and battery	
		Week 5	27,28,30		Electronic Ignition system. Starting system. Kick starter system.	
	September	week 1	3,11,6	<b>Unit-III: Chassis and Sub-Systems</b>	Mainframe, its types. Chassis and shaft drive	
		week 2	10,11		Single, multiple plates and centrifugal clutches	
		week 3	17,18,20		Gear box and gear controls. Front and rear suspension- systems.	
		week 4	24,25,27		Shock absorbers. Panel meters and controls on handle bar.	
	October	Week 1	1	<b>Unit-IV: Brake and Wheels</b>	Drum brakes, Disc brakes, front and rear brake links layouts.	
		Week 2	8,9		Spoked wheel, Cast wheel. Disc wheel. Disc types. Tyres & tubes	
		Week 3	15		Case study of Major Indian models of motorcycles,	
		Week 4	22,23,25		Bajaj, Vespa, Lambretta scooters. Enfield, TVSSuzuki, Hero-Honda, Yamaha RX100	
		Week 5	29,30	<b>Unit-V: Two Wheelers</b>	Kawasaki Bajaj Motor cycle. Kinetic Spark, <b>House Test</b>	
	November	Week 1	1		Hero Majestic, TVS mopeds. Servicing and maintenance.	
		Week 2			Three Wheelers: Case study of Indian Models. Front engine and rear engine. Auto rickshaws. Pickup van , Delivery Van and Trailer.	
		Week 3	12,13,15			
		Week 4 & 5	19,20,22,26			

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*Jitender Kumar* LESSON PLAN

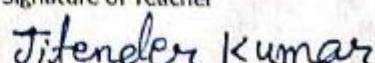
Name of Teacher :- Subject: Mechatronics & Microprocessors Class: 5th Semester Automobile

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
	August	Week 2	4,7,8	Unit-I: Introduction	Introduction to Mechatronics, Mechatronic system, Measurement systems, Control system-open	
		Week 3	11,14		Loop, Close loop and sequential, Microprocessor based controllers, The Mechatronics approach..	
		Week 4	18,21,23	Unit-II: Sensors and Transducers	Sensors and transducers, Performance terminology, Displacement, position and motion sensors	
		Week 5	25,28,30		Electromechanical sensors and transducers, Force sensors, Liquid flow sensors,	
		Week 1	1,4,5		Temperature sensors, Light sensors, Selection of sensors, Simple problems.	
	September	Week 2	8,11,12	Unit-III: Data Presentation Systems	Displays, Data presentation elements, Magnetic recording, Data acquisition systems,	
		Week 3	15,18,19		Measurement systems, Testing and calibration, Simple problems.	
		Week 4	22,25,26		Actuation systems, Pneumatic and hydraulic systems, Directional control valves,	
		Week 1	3		Pressure control valves, Cylinders, Process control valves, Rotary actuators	
	October	Week 2	6,9	Unit- IV: Mechanical Actuation Systems	Mechanical systems, Cams, Gear trains,	
		Week 3	13		Ratchet and pawl, Belt and chain drive	
		Week 4	23,25		Electrical systems, Mechanical switches	
		Week 5	27,30		switches, Solenoids, D.C. motors, A.C. motors, Stepper motors.	
		Week 2			HOUSE TEST	
	November	Week 3	10,13,14	Unit-V: Microprocessors & PLC	Microcomputer structure, Microcontrollers	
		Week 4	17,20,21		Applications, Programmable logic control.	
		Week 5	24		applications, Basic structure, input/output processing	

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**Govt. Polytechnic Talwar  
Distt. Kangra H.P. 176096**

**LESSON PLAN**

Name of Teacher :- Parveen Kumari

Subject:

Life Skills for Professional and Personal Life (LSPLL)

Class: 5th Semester Auto. Engg.

Session: August 2025-December 2025

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	August	2nd Week	4,7,8	<b>Unit 1: Life Skills, Soft Skills &amp; Interpersonal Skills:</b>	1. Definition of Life Skills and Soft Skills 2. Significance of Life Skills and Soft Skills in Personal and Professional life 3. Types of Soft skills and Life skills, Ways to develop Soft Skills and Life Skills.	
2		3rd Week	11,14		4. Concept of Interpersonal Skills and tips to improve Interpersonal Skills 5. Meaning of Team dynamics and Tips for improving Team dynamics	
3		4th Week	18,21,22,23			
4		5th Week	25,28,29,30		1. Meaning of Communication Skills 2. Significance and Characteristics of Assertive Communication, Significance and Characteristics of Assertive Communication, Significance and Characteristics of Assertive Communication, Significance and Characteristics of Assertive Communication	
5		1st Week	1,4,5,6		3. Techniques of Assertive Communication 4. Tips to develop Assertive Communication	
6		2nd Week	8,11,12		(A) Self Awareness: 1. Self Introspection (a) Meaning of Self awareness, Introspection, Self Reflection and Insight (b) Strategies to improve self awareness	Class test-I
7		3rd Week	15,18,19,20		(c) Importance of counselling and coaching 2. Stress Management (a) Meaning of Stress b) Factors causing positive and negative types of stress (c) Effects of Stress on mind and body (d) Stress Management techniques	
8	September	4th Week	22,25,26,27		3. Emotional Intelligence: (a) Meaning and Significance of EI (b) Strategies to develop and enhance Emotional Intelligence 4. Self-Esteem (a) Concept, Meaning and Significance of Self-Esteem	

9		5th Week	29	
10	October	1st Week	3,4	<b>Unit 3. Life Skills</b>
11		2nd Week	6,9,10	<p>to practice Compassion, 4. Body Language: (a) Elements of Body Language (b) Develop Positive Body Language that helps in building positive relationships (c) Avoiding Negative Body Language</p>
12		3rd Week	13	<b>Class test-II</b> <b>Diwali Vacation</b>
13		4th Week	23,24,25	<p>(C) Thinking Skills: 1. Positive Thinking, (a) Meaning and Benefits of Positive Thinking (b) Tips to develop attitude and Practice Positive Thinking</p> <p>2. Listening Skills: (a) Concept, Significance and Process of Listening Skills (b) Kinds of Listening (c) Factors hindering effective Listening (d) Tips for Active and Empathetic Listening 3. Resilience</p> <p>3. Resilience: (a) Meaning and Types of Resilience (b) Case studies of Resilience</p>
14		5th Week	27,30,31	<b>Unit 4. Time Management Skills</b>
15		1st Week	1	1. Concept and Significance of Time Management
15		1st Week	3,6,7	2. Benefits of Time Management
16		2nd Week	17,20	3. Tools and techniques of Time Management
17	November	3rd Week	21,22	4. How to overcome procrastination and avoid time-wasters
18		4th Week	24	<p>1. Meaning of Human values, Morals and Ethics 2. What is Value and types of values 3. Human Dignity and Humility: Meaning of Human Dignity</p> <p>Fundamental rights of a person, Meaning of Humility, Significance of humility, Developing and cultivating humility</p>

  
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**Govt. Polytechnic Talwar**  
**Distt. Kangra H.P. 176096**  
**Lesson Plan**  
**(Labs/Workshop)**

Name of Teacher:- <i>RAKESH KUMAR</i>	Designation:-WSI	Group:- G 1 & G 2	
Name of Lab/Workshop:-SCA	Class/Branch:- 5th sem/Automobile		
Sr. No.	Description of Practical job	Date	Remarks
1	Group discussion about Job Opportunities, careers in Technical		
2	Knowledge of websites e-Pass, DTE, HPTSB, HPPSC, HPSSC.		
3	Poster making competition ( Road safety rules)		
4	G.K. about H.P.		
5	Lecture on Use of mobile, Ragging etc.		
6	Practices regarding Athletics/Cultural		
7	G.K. about INDIA		
8	Poster making competition ( Drugs)		
9	Declamation contest		
10	Educational field visits or Cultural Activities and Photography		

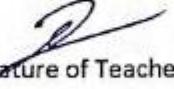
  
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Lesson Plan  
(Labs/Workshop) (AWP-III)

Name of Teacher:- <u>Titender Kumar</u>		Designation:- <u>Driver Lecturer/W</u>	Shop Subdt.
Name of Lab/Workshop:- <u>Driving Practice II</u>		Class/Branch:- 5th sem/Automobile	
Sr. No.	Description of Practical job	Date	Month
1	Study of safety equipment's for electrical vehicles.	7	August
2	Study of electric vehicle components (Drive chain, PDU, On board charger, BCM) and fault findings	8	
3	Study of Electric Vehicle battery system, rating and drive train system in Electric Vehicle.	14	
4	Job on making the electric vehicle voltage free on two wheeler and electric vehicle.	21	
5	Job on measurement and diagnosis on electric drive motor in electric vehicle on trainer.	23	
6	Job on Removal of windows, replacement of window glass, fender and window motor mechanism.	28	
7	Diagnosis and installation of center locking connected car system and standard accessories.	30	
8	Job on removal of complete dashboard and installation	4	
9	Decarburing of Engines: removing carbon deposits from engine combustion chamber, piston crown, and valve parts manually and by using engine de-	5	
10	Overhauling of Diesel engine.	11	
11	Surfacing of cylinder heads, cylinder blocks and manifolds with cylinder head re-facing machine.	12	
12	Practice in cylinder boring machine, measuring ovality and taperness of cylinder bore, using cylinder dial gauge, inside micrometer, telescopic gauge, and use of direct reading micrometer.	18	September
13	Practice in honing cylinder blocks, keeping allowance of cylinder clearances.	19	
14	Inspection and practice of crankshaft, crankpin, journal grinding, main journal grinding on crankshaft grinding machine.	25	
15	Practice of cam shaft journals on line boring machine.	26	
16	Servicing of valve and valve mechanism, replacement of valves.	9,23	
17	Testing of fuel injector in fuel injection tester.	25	October
18	Calibrations of fuel injection pump on fuel calibration machine.	30	
19	Practice on brake drum lathe, measuring ovality, skimming the brake drum.	13,14	
20	Practice in nozzle grinding and lapping, setting of injection pressure and nature of spray.	20,21	November

  
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**Lesson Plan**  
**(Labs/Workshop)**

Name of Teacher:- <i>Chaudhary Bhawna</i>		Designation:-Driver <i>Lecturer</i>			
Name of Lab/Workshop:-Driving Practice II		Class/Branch:- 5th sem/Automobile			
Sr. No.	Description of Practical Job	Date	Month	Remarks	
1	Driving Techniques	5,6	August		
2	Revision	12,13			
3	Maneuver in: Passing, Merging, Diverging, Overtaking, Crossing, Turning,	19,20			
4	Use of bye pass, sub way, over bridge and fly over	26,27			
5	Difficult driving- Night driving, Hill driving, Driving under special	2,3	September		
6	Driving on highways: lane selection & lane discipline	9,10			
7	Public relations and dealing with police	16,17			
8	Fire Hazards	23,24			
9	First Aid	4,8	October		
10	Vehicle Repair & Maintenance: Break down recovery	14,21			
11	Recovery from police: accident cases	22,28,29			
12	Record keeping	11,12			
13	Accounting	18,19	November		
14	Practice on road up to 60 K.M. during the semester for each student.	25,26			

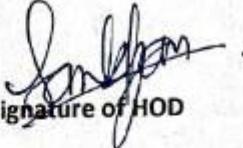
Signature of Teacher *Chaudhary Bhawna*

Signature of *Sanjay Kumar*

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**Lesson Plan**  
**(Labs/Workshop)**

<b>Name of Teacher:-Vikram Chand</b>		<b>Designation:-WSI</b>			
<b>Name of Lab/Workshop:-Auto Electrical</b>		<b>Class/Branch:- 5th sem/Automobile</b>			
<b>Sr. No.</b>	<b>Description of Practical job</b>		<b>Day</b>	<b>Month</b>	<b>Remarks</b>
1	Testing of Battery with hydrometer and high rate discharge tester, charging of Batteries.		7	<b>August</b>	
2	Testing and measurement of ignition timing and dwell angle with timing light and cam angle tester.		14		
3	Testing, cleaning and setting of spark plug on spark plug cleaning and testing machine.		21		
4	Testing of alternator rotor and stator winding for short circuit, ground and broken circuit using alternator test bench.		28		
5	Testing and setting of horn and relay.		4	<b>September</b>	
6	Testing and fault tracing of field winding, armature and magnetic switch for short circuit, grounding of a starter using starter test bench.		11		
7	Identification of colour codes for continuity test in a wiring harness.		18		
8	Study and sketching of complete wiring circuit of an Indian vehicle.		25		
9	Fault tracing and diagnosis of electronic ignition system through engine car scanner.		9	<b>October</b>	
10	Study and demonstration of MPFI and CRDI system.		16		
11	Layout of temperature sensor circuit.		23,30		
12	Study and layout circuit of D.C. Shunt motor and stepper motor		6	<b>November</b>	
13	PLC basic circuits and control		13		

  
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