

LESSON PLAN

Name of Faculty: GUEST FACULTY

Discipline:AUTOMOBILE ENGG

Semester: V

Subject:AEE

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week:3 PERIODS

WEEK THEORY

WEEK	LECTURE NO.	TOPIC
1	1. Chapter 1	Introduction Various Electrical and Electronics equipment components/systems in automobil
	2	their functions and demands, earth return system, types of earthing, 6V, 12V and 48 V systems.
	3 Chapter 2	Batteries , Lead Acid Batteries: Construction, working
2	4	elements, materials used, electrolyte and its strength, effect of added plate area and temperature, rating, capacity, efficiency
	5	temperature characteristics, terminal voltages, charging and discharging.
	6	Battery Testing: Electrolyte testing by hydrometer, voltage test, high rate discharge and cadmium test.
3	7	Battery Charging: Constant potential and constant

		current, initial charging, normal charging,
	8	trickle charging, intermittent charging, boost charging.
	9	Battery Defects: Sulphation, plates decay, erosion, cracking, sedimentation, separator defects, short circuits, overcharging failure.
4	10	Alkaline Batteries: Basic description, types, merits and demerits.
	11	Lithium ion battery: Construction and working
	12	Concept of less maintenance and maintenance-free batteries
5	13	Fuel cells- Principle of working and types of fuel cell
	14	Class test
	15	Charging System
	Chapter 3	
6	16	Circuits, function and various components,
	17	dynamo and alternator, types, construction, working,
	18	advantages and disadvantages of dynamo and alternators, drives, cut out relay.
7	19	Necessaty of regulation , construction and working of regulator for daynmo and alternator.
	20	Starting System
	Chapter 4	
	21	Starting requirements of I. C. Engine

8	22	Types and constructional details of starter motor
	23	Starter switch
	24	starter to engine drive and their types
9	25 Chapter 5	Lighting System, Various lighting circuits, head lamp, type and constructional details
	26	sealed beam, double filaments, vertical and side control of lamps, fog light, side light, brake light
	27	instrument light, indicator lights, reversing light, warning light, interior lights, LED lights.
10	28	Wiring: HT and LT
	29	Wiring specifications
	30	Cable colour codes, wiring harness
11	31	Cable connections
	32	Wiring diagram of cars and two wheeler.
	33	Fuses, faults and rectification.
12	34	Class test
	35 Chapter 6	Auto electronics system
	36	Concept of ecu
13	37	Concept of sensor and its application in different system
	38	Fuel supply , ignition system
	39	ABS and steering system
14	40 chapter 7	Electrical accessories , speedometer, temperature gauge

	41	Wind screen wiper, horn , horn relays ,tachometer
	42	Heater, deforster , air conditioner
15	43	Electric door locks
	44	Window actuation , seat adjuster
	45	Class test

LESSON PLAN

Name of Faculty: Mr. Jogesh Dahiya (THEORY+PRACTICAL)

Discipline: Automobile engineering

Semester: 5th

Subject: Auto Engine-ii

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week: Lecture-03, Practical -06(3+3)

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC	PRACTICAL DAY	TOPIC
1 ST	1	UNIT-1.High Speed Diesel Engine	1	Dismantling, inspection and assembling of fuel injection pump.
	2	Theory of diesel engine operation. Difference between petrol & diesel engine.	2	EVALUATION
	3	petrol & diesel engine ,Advantages and disadvantages, Fuel filters-primary and secondary Fuel injection pumps- plunger and barrel type distributor type;		
	4	Priming of fuel feed pumps		
2 ND	5	Fuel injectors and solid injection	3	Dismantling, inspection and assembling of fuel injector.
	6	Common rail direct Injection(CRDI) Type of nozzles	4	EVALUATION
	7	Governing and type of governors.	5	
3 RD	8	Test	6	Dismantling, inspection and assembling of alternator.
	9	Unit-2. Combustion Phenomenon of combustion in C.I engines and S.I engines	7	EVALUATION
	10	phases of combustion and after burning	8	Dismantling, inspection and assembling of starter motor.
4 TH	11	Methods producing turbulence	9	EVALUATION
	12	Various types of combustion chambers for petrol and diesel engines. Detonation and knocking		
	13	octane and cetane number		
5 TH	14	swirl and squish	10	viva
	15	Test		
	16	Unit -3. Different Types of Engine ,Super charged engines	11	EVALUATION
6 TH	17	Location of super charger	12	Phasing and calibration of fuel injection pump on

	18	Power absorbed by super charger. Turbo charged engines		calibration machine.
7 TH	19	Wankel engine	13	EVALUATION
	20	Gas turbines	14	Gasoline engine Emission test using exhaust gas analyser.
	21	Jet propulsion Alternate fuels operated engines like L.P.G, C.N.G operated		
8 TH	22	Hydrogen engine/cell	15	EVALUATION
	23	Working principle of Hybrid car	16	Diesel engine Emission test using smokemeter.
	24	Fuel cell for car dual fuel operated engines		
9 TH	25	Test	17	EVALUATION
	26	Unit -4. Performance of Engine	18	viva
	27	Effect on engine performance due to atmospheric temperature, Effect on engine performance due to atmospheric pressure		
10 TH	28	Effect on engine performance due to atmospheric compression Ratio engine speed	19	EVALUATION
	29	Effect on engine performance due to atmospheric working conditions dirt	20	Study of CRDT engine
	30	Effect on engine performance due to atmospheric working conditions desert, hills Injection timing/spark timing.		
11 TH	31	Air fuel ratio. Their remedial measures	21	EVALUATION
	32	Two stroke engine scavenging – definition and types	22	Servicing of valves and valve-mechanism
	33	Test Unit-5 Engine Pollutants and its control		
12 TH	34	Sources of engine pollutants of S.I and C.I engine. Effect of pollutants on human and environment	23	EVALUATION
	35	Methods of Control – Crank case ventilation	24	Identify various electrical components on the mock up wiring board.
	36	fuel tank ventilation, carburetion and recirculation., Redesigning of various engine system, V.V.R.		
13 TH	37	Exhaust gas recirculation systems.	25	EVALUATION
	38	Close loop feedback, electronic integrated engine management system	26	Removing and refitting head light assembly, head light beam setting.
	39	Catalytic converters. Emission rules and regulations. Bharat – I, II, III,IV		
14 TH	40	Test	27	EVALUATION
	41	Unit-6 Modern Vehicles	28	Checking and setting of horn, relay, dipper switch, flasher unit and indicator circuits.
	42	Brief description of constructional features of engine used in automobiles such as-Hero, Tata		
15 TH	43	Honda,Maruti Leyland and Volvo trucks Suzuki	29	EVALUATION
			30	viva

	44	Class test		
	45	EVALUATION		

LESSON PLAN

Name of Faculty: S.L.GUPTA

Discipline: AUTOMOBILE ENGG

Semester: V

Subject: CBT-II

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week: 3 PERIODS

WEEK	LECTURE		PRATICAL	
	LECTURE DAY	TOPIC	PRATICAL DAY	TOPIC
1	1.	Chapter 1 - Suspension System Function, types- independent, rigid axle. Suspension	1	Study and servicing of coil spring type suspension
	2	springs – functions, construction materials and types(coil spring, leaf spring and torsion bar).		
	3	Sprung and un-sprung weight, characteristics of spring materials, Types of leaf spring.		
2	4	Leaf spring terminology- spring eye, bushes, leaf sections, rubber pads, pressure blocks, spring cover, interleaf inserters	2	Study and servicing of leaf spring type suspension system
	5	Variable rate spring, helper spring. Pneumatic suspension system – lay out and working.		
	6	Function and Construction of hydraulic damper.		

3	7	Function and Construction of hydraulic shock absorber.	3	Servicing and testing shock absorber
	8	Diagnosis of common faults and their rectifications.		
	9	Chapter 2 Wheel and Tyres Wheels – types, constructional detail.		
4	10	Material used for wheels. Tyres - classification of tyres.	4	Tyre changing practice
	11	function of tyres. Constructions of pneumatic tyres, composition of covers, tread breaker		
	12	bead and casing, comparison of crossply and radial-ply tyres. Causes of excessive tyre wear.		
5	13	Tyre care and maintenance. Static and dynamic balancing.	5	Retreading of tyres (visit to auto-market)
	14	Tubeless tyres, Run flat tyres, retreading of tyres. Concept of self inflating tyres.		
	15	Class test		
6	16	Chapter 3 Braking System Purpose of brakes, layout of braking system, components	6	Servicing and overhauling of mechanical brakes
	17	Types of brakes mechanical, hydraulic, power. Principle of hydraulic brakes, layout.		
	18	Braking action, master cylinder, wheel cylinder		

7	19	self adjusting brakes, self applying and self releasing action.	7	Brake shoe changing practice, brake adjustment.
	20	anti-skid devices, pedal travel, brake enclosures, heat generation and dissipation.		
	21	Drum brakes-Construction & Working, leading and trailing shoes.		
8	22	Disc brakes- Construction and Working.	8	Servicing of hydraulic brakes, bleeding of brakes
	23	Hand brakes, common faults and their rectification.		
	24	Chapter 4 Power Brakes Types ,Air, air-hydraulic and hydro-vac		
9	25	Air, air hydraulic brakes-their construction, components and working details.	9	Wheel balancing – static and dynamic
	26	hydro-vac brakes-their construction, components and working details.		
	27	Brake fluid and its characteristics,.		
10	28	Antilock brake systems.	10	Study of hand brakes
	29	Brake tests, common faults and their rectification.		
	30	Class Test		
11	31	Chapter 5 Body fabrication: Classification of vehicles according to body.	11	Disc pad changing in disc brakes, lubrication of disc brakes.
	32	Car body - types of car bodies,		

		body construction type.		
	33	Body and frame type, Unitised body.		
12	34	Various body panels and their constructional details.	12	Removing and refitting body parts such as bonnet, front bumper, doors and seats.
	35	Body materials.		
	36	body painting process.		
13	37	Chapter 6 Automotive Safety Systems Preventive design, designing for minimum injury in accident	13	Practice on body repair.
	38	Seat belts, air bags.		
	39	electronic vehicle stability and occupant protection systems.		
14	40	Pedestrian protection.	14	Viva voice
	41	Chapter 7 Miscellaneous History, leading manufacturers of automobiles		
	42	their market share, recent developments in automobile industry .		
15	43	automotive components industry in India.	15	Final Evaluation
	44	Specifications of Chassis and transmission system of a two-wheeler and four - wheeler		
	45	Class test		

LESSON PLAN

Name of Faculty: Sh. PARVEEN MALIK/ Sh. SATYAWAN

Discipline: AUTOMOBILE ENGG.

Semester: 5TH

Subject: DRIVING PRACTICE

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week: PRACTICAL-5 (3+2)

WEEK	PRACTICAL	
1 ST	PRACTICAL DAY	TOPIC
	1	Knowledge of general road safety & personal safety, How to get driving license, motivate to get prepared the license, if eligible
	2	Traffic rules, signs and signals Assignment to prepare traffic signs and signals chart
2 ND	3	Driving regulations and procedure
	4	Identification of various levers, switches and controls of vehicle. How to operate them?
3 RD	5	Pre-driving checks:- before sitting on the driver seats, after sitting on the driver's seat. Starting the engine and warming up,
	6	Precautions before and after moving the vehicle. Operation of engaging and disengaging the clutch.
4 TH	7	Gear changing from low to high and high to low
	8	Driving practice in open ground, practice on steering control Braking and use of brakes, stopping distance and following distance.
5 TH	9	Driving practice in open ground, practice on steering control Braking and use of brakes, stopping distance and following distance.
	10	Driving practice in open ground, practice on steering control Braking and use of brakes, stopping distance and following distance.
6 TH	11	Reversing the Vehicle
	12	Driving through given targets
7 TH	13	Driving through given targets

	14	Driving through given targets
8 TH	15	Circling and making "8" SIGN
	16	Driving practice on open uncrowded road
9 TH	17	Driving practice on open uncrowded road
	18	Driving practice on open uncrowded road
10 TH	19	Driving practice on open uncrowded road
	20	Inside and outside inspection/checking of vehicle Checking of engine oil, horn, starter, coolant and battery
11 TH	21	Well trained students: driving practice on institute/city road Others: More training on ground and open road
	22	Driving proficiency test
12 TH	23	Well trained students: driving practice on institute/city road Others: More training on ground and open road
	24	Well trained students: driving practice on institute/city road Others: More training on ground and open road
13 TH	25	Well trained students: driving practice on institute/city road Others: More training on ground and open road
	26	Well trained students: driving practice on institute/city road Others: More training on ground and open road
14 TH	27	Well trained students: driving practice on institute/city road Others: More training on ground and open road
	28	Well trained students: driving practice on institute/city road Others: More training on ground and open road
15 TH	29	Driving proficiency test
	30	Driving proficiency test and final evaluation

LESSON PLAN

Name of Faculty: Ms. Jyoti

Discipline: AUTOMOBILE ENGG

Semester: V

Subject: Environment Education

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week:3 PERIODS

WEEK	THEORY	
	LECTURE NOS	TOPIC
1 ST	1	UNIT – 1 . Definition & Scope of Environmental Education
	2	Importance of Environmental Education
	3	UNIT – 2 Basics of ecology, biodiversity
	4	Basics of eco system
2 ND	5	Sustainable development
	6	UNIT – 3 Definition of pollution, Natural Sources of pollution
3 RD	7	Manmade Sources of pollution
	8	Causes & effects of air pollution
	9	Control measures of Air pollution
4 TH	10	Causes & effects of water pollution
	11	Control measures of water pollution
	12	Causes & effects of noise pollution Radioactive and nuclear pollution
5 TH	13	Control measures of noise pollution
	14	Causes & effects of soil pollution
	15	Control measures of soil pollution
6 TH	16	Causes & effects of Radioactive and nuclear pollution
	17	Control measures of Radioactive and nuclear pollution, Units of each type of pollution measurement
	18	SESSIONAL TEST - 1
7 TH	19	UNIT - 4. Solid waste management Causes of Urban solid waste
	20	Effect of Urban solid waste
	21	Causes of Industrial solid waste and its effects

8 TH	22	Control measure of urban and industrial waste,
	23	UNIT – 5. Mining and deforestation Causes
	24	Effects of Mining and deforestation
9 TH	25	Control measures of Mining and deforestation
	26	UNIT – 6 Environmental Legislation Water (prevention and control of pollution) Act 1974
	27	Air (Prevention and Control of Pollution) Act 1981
10 TH	28	Environmental Protection Act 1986
	29	Role and Function of State Pollution Control Board
	30	Environmental Impact Assessment (EIA)
11 TH	31	SESSIONAL TEST – 2
	32	UNIT – 7. Role of Non-conventional Energy Resources Definition and sources of Non- conventional energy
	33	Role of Solar energy Wind energy
12 TH	34	Role of Wind energy
	35	Role of Bio energy
	36	Role of Hydro energy
13 TH	37	UNIT – 8 Current Issues in Environmental Pollution Global Warming
	38	Green house effect
	39	Depletion of Ozone Layer
14 TH	40	Recycling of material
	41	Environment of ethics
	42	Rain water harvesting
15 TH	43	Maintenance of ground water
	44	Acid rain and carbon credits
	45	SESSIONAL TEST - 3

LESSON PLAN

Name of Faculty: GUEST FACULTY

Discipline: AUTOMOBILE ENGINEERING

Semester: V

Subject: EMPLOYABILITY SKILLS - I

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week: 2

WEEK	PRACTICAL	
	PRACTICAL DAY	TOPIC
1 ST	1	UNIT I. Writing skills Writing Official correspondence, Assignment for official letter writing
2 nd	2	Writing Business correspondence Assignment for Business letter writing
3 RD	3	Writing Job Application Assignment for Writing covering letter
4 TH	4	Types of Resume How to prepare a Resume Assignment for preparing Resume
5 TH	5	Report writing - key features and kinds , Assignment – Report writing of Industrial visit/training
6 TH	6	Checking of assignments and evaluation
7 TH	7	UNIT II. Oral Communication Skills Ways of Giving advice and making comparisons, Classroom level practice
8 TH	8	How to agree and disagree, How to take turns in conversation - practice
9 TH	9	How to Fix and cancel appointments - practice
10 TH	10	Evaluation
11 TH	11	UNIT III. Generic Skills Stress management
12 TH	12	Time management
13 TH	13	Negotiations and conflict resolution
14 TH	14	Team work and leadership qualities
15 TH	15	Evaluation

LESSON PLAN

Name of Faculty: VIJAY SINGH

Discipline: AUTOMOBILE ENGINEERING

Semester: V

Subject: GARAGE EQUIPMENT

Lesson plan Duration: 15 WEEKS

Work Load (Lecture/Practical) per week: THEORY-3

WEEK	THEORY	
1 ST	LECTURE NOS	TOPIC
1 ST	1	UNIT - 1. Hand Tools/Measuring Tools Classification and Use of Screw drivers
	2	Classification and Use of Spanners and wrenches
	3	Classification and Use of Pliers
2 ND	4	Classification and Use of Hammers
	5	Classification and Use of Chisels & Files
	6	Classification and Use of Hacksaw, Taps and dies
3 RD	7	Classification and Use of Reamers & Feeler gauge
	8	Classification and Use of Cylinder dial gauge
	9	UNIT – 2. General Equipment Construction, working and application /use of Bench grinder
4 TH	10	Construction, working and application /use of Air compressor
	11	Construction, working and application /use of Hydraulic hoist
	12	Construction, working and application /use of Electric hoists
5 TH	13	Construction, working and application /use of High pressure washing equipment (Car washer)
	14	Construction, working and application /use of Grease Guns-manual and bucket type, pneumatic
	15	Construction, working and application /use of Tyre inflation gauge (Manual and Digital type automatic)
6 TH	16	Construction, working and application /use of Oil sprayers & Fire extinguisher , Contents of First aid box
	17	SESSIONAL TEST - 1
	18	UNIT – 3.Turning and Testing Equipment Construction, working and application/ use of Vacuum Gauge
7 TH	19	Construction, working and application/ use of Compression Gauge (Pressure Gauge)

	20	Construction, working and application/ use of Distributor Tester; cam (dwell) angle tester, r.p.m. tester.
	21	Construction, working and application/ use of Spark plug cleaner and tester
8 TH	22	Construction, working and application/ use of Ignition timing light
	23	Construction, working and application/ use of Fuel injector tester
	24	Construction, working and application/ use of Fuel consumption tester
9 TH	25	UNIT – 4. Engine Repair Tools/Measuring and Testing Equipment Construction and use of Torque wrench, pneumatic wrench
	26	Construction and use of Piston ring compressor, expander Valve lifter and valve spring tester
	27	Construction and use of Piston ring files, groove cleaner
10 TH	28	Construction and use of Scrappers Piston ring remover
	29	Construction and use of Smokemeter
	30	SESSIONAL TEST - 2
11 TH	31	UNIT – 5. Reconditioning/Testing Equipment for Chassis, Body Construction, working and use of Brake Efficiency Tester (Chassis Dynamometer) or brake testing equipment
	32	Construction, working and use of Jack – mechanical type
	33	Construction, working and use of Jack - hydraulic type, trolley type
12 TH	34	Construction, working and use of Creeper, Paint chamber
	35	Construction, working and use of Paint Spray Gun, Paint Drying Equipment
	36	Construction, working and use of Spring tester
13 TH	37	UNIT – 6. Special Tools Construction and use of Ridge cutter, Crank shaft cutter
	38	Construction and use of Tools for tubes flaring Soldering tool
	39	Construction and use of Nipple forming tool, Decarbonising kit
14 TH	40	UNIT – 7. Body Repair Tool Kit Assorted hammers, assorted dollies, assorted screw drivers
	41	body spoons, sanders, pick tools,
	42	adjustable file, drip moulding pliers, assorted wrenches,
15 TH	43	cold chisels, fender beading tools,
	44	power tools
	45	SESSIONAL TEST - 3