Government Polytechnic for Women, Faridabad

Lesson Plan

Name of Faculty **:** Deepika (Theory / Practical)

Discipline **:** Mechanical Engineering

Semester : 6th

Subject **:** Automobile Engineering

Lesson Plan Duration **:** 15 weeks (from January 2020 to April 2020)

Work Load (Lectures / Practical) per week (in hours): Lectures-03, Practicals-02

WEEK	THEORY		PRACTICAL	
	Lecture Day	**Topic (Including Assignment / Test)**	**Practical Day**	**Topic**
1st	1st	**1.Introduction** ▪ Automobiles and its development	1st	**1.**Fault and their remedies in ▪ Battery ignition system ▪ Magnetic ignition system
	2nd	▪ Various types of automobiles manufactured in India		
	3rd	▪ Layout of chassis **Assignment Topic:** Types of automobile and layout of chassis	2nd	Do
2nd	4th	**2. Power System** ▪ Fuel system for petrol and diesel engines including multipoint fuel injection (MPFI)	3rd	**2.** Demonstration of ▪ Head light model ▪ Wipers ▪ Indicators
	5th	▪ Common rail direct injection (CRDI) ▪ Fuel injectors and nozzles	4th	do
	6th	▪ Comparison of MPFI with carburetor system		

3rd	7th	▪ Concept of double overhead cam and single overhead cam	5th	**3.** Demonstration of ▪ AC pump ▪ SU pump ▪ Master cylinders
	8th	▪ Twin cam 16 valve technology in 4 cylinder engine	6th	do
	9th	**Test of chapter – 1,2**		
4th	10th	**3.Transmission System** ▪ Clutch- Function ▪ Constructional details of single plate and multiplate friction clutches	7th	do
	11th	▪ Centrifugal and semi centrifugal clutch ▪ Hydraulic clutch ▪ Gear box- function	8th	Do
	12th	▪ Concept of sliding mesh and constant mesh ▪ Synchromesh gear box ▪ Torque converter and overdrive		
5th	13th	▪ Types of drives- front wheel, Rear wheel and Four wheel ▪ Function of propeller shaft	9th	**4**. Demonstration of ▪ Rear axle ▪ Differential ▪ Steering system
	14th	▪ Universal joint ▪ Differential ▪ Different types of rear axles and front axles	10th	Do
	15th	▪ Wheels and tyres ▪ Types of wheels ▪ Types and specifications of tyres used in Indian vehicles		
6th	16th	▪ Wheel balancing **Assignment Topic:** ▪ MPFI,CRDI, nozzles ▪ Clutch- function ,types ▪ Gear box- types, function ▪ Drives, wheel and tyres- types	11th	Do

	17th	**Test of chapter-3**	12th	
	18th	**4. Steering System** ▪ Function and principle of Ackerman and Davis steering mechanism		Do
7th	19th	▪ Types of steering gear boxes-worm and nut ▪ Worm and wheel	13th	**5.** Fault finding practices on an automobile- four wheelers (petrol/ diesel vehicles)
	20th	▪ Worm and roller ▪ Rack and pinion	14th	Do
	21st	▪ Power steering system		
8th	22nd	Alignment of wheels ▪ Toe in ▪ Toe out	15th	**6.**Tuning of automobile engine
	23rd	▪ Camber ▪ Caster	16th	Do
	24th	▪ Kingpin inclination **Assignment Topic:** ▪ Types of gear boxes ▪ Power steering system		
9th	25th	**Test of chapter -4**	17th	**7.** Driving practice on a 4-wheeler
	26th	**5. Braking System** ▪ Constructional details and working of mechanical and hydraulic brake	18th	Do
	27th	▪ Concept of air and vacuum brake		
10th	28th	▪ Brake adjustment	19th	**8**.Charging of an automobile battery and measuring cell voltage and specific gravity of electrolyte
	29th	▪ Introduction to antilock brake system		
	30th	Working of antilock brake system **Assignment Topic:** ▪ Types of brake ▪ Working of antilock brake system	20th	Do

11th	31st	**Test of chapter- 5**	21st	**9**.Changing of wheels, inflation of tyres and balancing of wheels
	32nd	**6. Suspension System** ▪ Function ▪ Types of suspension system		
	33rd	▪ working of coil spring	22nd	Do
12th	34th	▪ Leaf spring	23rd	**10**.Checking spark gap and valve clearance
	35th	▪ Concept of air suspension	24th	Do
	36th	▪ Shock absorber		
13th	37th	**7. Auto Electrical System** ▪ Constructional details of lead acid cell battery	25th	Do
	38th	▪ Maintenance of batteries ▪ Checking of batteries for voltage	26th	Do
	39th	▪ Checking of batteries for specific gravity ▪ Magneto and battery coil ignition system		
14th	40th	Concept of dynamo	27th	**11**.Cleaning and adjusting a carburetor
	41st	Alternator ▪ Construction ▪ Working	28th	Do
	42nd	Charging of battery by alternator		
15th	43rd	Regulator **Assignment Topic:** ▪ Leaf spring, shock absorber ▪ Alternator ▪ Dynamo	29th	Do
	44th	**Test of chapter- 6**	30th	Do
	45th	**Test of chapter- 7**		