

Lesson Plan

Name of the Institute:	C.V.Raman Polytechnic
Department:	Mechanical Engineering
Semester/Division/Branch:	6 th Sem/ME
Subject Name with code:	Automobile Engineering and Hybrid Vehicles (Th2)
Total No. of Class (Required):	60
Faculty Name:	Dr. Brundaban Sahoo

Class No.	<i>Brief description of the Topic/Chapter to be taught</i>	Remarks
1	Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)	
2	Automobiles: Definition, need and classification: Layout of automobile chassis with major components (Line diagram)	
3	Clutch System: Need, Types	
4	Working principle of single plate clutch with sketch	
5	Working principle of multi plate clutch with sketch	
6	Gear Box: Purpose of gear box	
7	Construction and working of a 4 speed gear box(Sliding mesh)	
8	Construction and working of a 4 speed gear box(Constant mesh)	
9	Construction and working of a 4 speed gear box(Synchro mesh)	
10	Concept of automatic gear changing mechanisms	
11	Concept of automatic gear changing mechanisms(Epyclic gear train)	
12	Concept of automatic gear changing mechanisms (Freewheeling mechanism)	
13	Concept of automatic gear changing mechanisms (Fluid drive)	
14	Concept of automatic gear changing mechanisms (Torque converter)	
15	SemiAutomatic and automatic transmission	

16	Propeller shaft: Constructional features	
17	Differential: Need, Types and Working principle	
18	Differential: Need, Types and Working principle	
19	Braking systems in automobiles: Need and types	
20	Working of Mechanical Brake	
21	Working of Hydraulic Brake	
22	Working of Air Brake	
23	Working of Air assisted Hydraulic Brake	
24	working of Vacuum Brake	
25	Describe the Battery ignition system	
26	Describe the Magnet ignition system	
27	Spark plugs: Purpose, construction and specifications	
28	Spark plugs: Purpose, construction and specifications	
29	State the common ignition troubles and its remedies	
30	Description of the conventional suspension system for Rear and Front axle	
31	Description of the conventional suspension system for Rear and Front axle	
32	Description of independent suspension system used in cars (coil spring and tension bars)	
33	Description of independent suspension system used in cars (coil spring and tension bars)	
34	Constructional features and working of a telescopic shock absorber	
35	Engine cooling: Need and classification	
36	Engine cooling: Need and classification	
37	Engine cooling: Air cooling	
38	Engine cooling: water cooling	
39	Describe defects of cooling and their remedial measures	

40	Describe the Function of lubrication	
41	Describe the lubrication System of I.C. engine	
42	Methods of lubrication	
43	Methods of lubrication	
44	Describe Air fuel ratio	
45	Describe Carburetion process for Petrol Engine	
46	Describe Multipoint fuel injection system for Petrol Engine	
47	Describe the working principle of fuel injection system for multi cylinder Engine	
48	Filter for Diesel engine	
49	Describe the working principle of Fuel feed pump	
50	Describe the working principle of Fuel Injector for Diesel engine	
51	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles	
52	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles	
53	Description of Electric Vehicles, operational advantages.	
54	Present performance and applications of Electric Vehicles	
55	Battery for Electric Vehicles, Battery types and fuel cells	
56	Battery for Electric Vehicles, Battery types and fuel cells	
57	Hybrid vehicles, Types of Hybrid and Electric Vehicles	
58	Parallel, Series, Parallel and Series configurations	
59	Drive train	
60	Solar powered vehicles	


Signature of Faculty


Signature of the H.O.D