

Discipline: Mechanical Engineering	Semester : 6 th Semester	Name of the Teaching Faculty: Miss Shradha Suman Adabar, lect. mechanical engineering	
Subject: AUTOMOBILE ENGINEERING AND HYBRID VEHICLES	No. of Days/week Class Allotted: 60	No of weeks: 18	
week	Class Day	Theory Topics	
1 st	1 st	Automobiles: Definition, need and classification	
	2 nd	Layout of automobile chassis with major components (Line diagram)	
	3 rd	Clutch System: Need, Types (Single & Multiple)	
	4 th	Working principal with net sketch	
2 nd	1 st	Gear Box: Purpose of gear box	
	2 nd	Construction and working of a 4 speed gear box	
	3 rd	Concept of automatic gear changing mechanisms	
	4 th	Propeller shaft: Constructional features	
3 rd	1 st	Differential: Need, Types	
	2 nd	Working principle of Differential	
	3 rd	Braking systems in automobiles: Need and types	
	4 th	Mechanical Brake	
4 th	1 st	Hydraulic Brake	
	2 nd	Air Brake	
	3 rd	Air assisted Hydraulic Brake	
	4 th	Vacuum Brake	
5 th	1 st	IGNITION & SUSPENSION SYSTEM	
	2 nd	Describe the Battery ignition and Magnet ignition system	
	3 rd	Spark plugs: Purpose	
	4 th	Spark plugs construction and specification	
6 th	1 st	State the common ignition troubles and its remedies	
	2 nd	Description of the conventional suspension system for Rear and Front axle	
	3 rd	Description of independent suspension system used in cars (coil spring and tension bars)	
	4 th	Constructional features and working of a telescopic shock absorber	

	2 nd	Engine cooling: Need and classification	
	3 rd	Describe defects of cooling and their remedial measures	
	4 th	Describe the Function of lubrication	
8 th	1 st	Describe the lubrication System of I.C. engine	
	2 nd	FUEL SYSTEM	
	3 rd	Describe Air fuel ratio	
	4 th	Describe Carburetion process for Petrol Engine	
9 th	1 st	Describe Multipoint fuel injection system for Petrol Engine	
	2 nd	Describe the working principle of fuel injection system for multi cylinder Engine	
	3 rd	Filter for Diesel engine	
	4 th	Describe the working principle of Fuel feed pump and Fuel Injector for Diesel engine	
10 th	1 st	ELECTRIC AND HYBRID VEHICLES	
	2 nd	Introduction, Social and Environmental importance of Hybrid and Electric Vehicles	
	3 rd	Description of Electric Vehicles, operational advantages	
	4 th	applications of Electric Vehicles	
11 th	1 st	Battery for Electric Vehicles	
	2 nd	Battery types and fuel cells	
	3 rd	Hybrid vehicles, Types of Hybrid and Electric Vehicles: Parallel, Series	
	4 th	Parallel and series configuration	
12 th	1 st	Drive train	
	2 nd	Different Solar powered vehicles	
	3 rd	Revision of Chapter- 1.1,1.2	
	4 th	Revision of Chapter – 1.3, 1.4	
13 th	1 st	Revision of Chapter – 1.5, 1.6	
	2 nd	Revision of Chapter – 2.1, 2.2	
	3 rd	Revision of Chapter – 2.3,2.4	
	4 th	Revision of Chapter – 2.5,2.6	
14 th	1 st	Revision of Chapter – 3.1,3.2	
	2 nd	Revision of Chapter – 3.3, 3.4	
	3 rd	Revision of Chapter – 3.5, 3.6	
	4 th	Revision of Chapter – 4.1,4.2	
15 th	1 st	Revision of Chapter – 4.3,4.4	
	2 nd	Revision of Chapter – 5.1,5.2	
	3 rd	Revision of Chapter – 5. 3,5.4	
	4 th	Revision of Chapter – 5.5,5.6	
16 th	1 st	Revision of Chapter – 6.1	

	2 nd	Revision of Chapter – 6.2	
	3 rd	Revision of Chapter – 6.3	
	4 th	Revision of Chapter – 6.4	
17 th	1 st	Revision of Chapter – 6.5	
	2 nd	Revision of Chapter – 6.6	
	3 rd	Discussion of Probable Questions and Answers (1)	
	4 th	Discussion of Probable Questions and Answers(2)	
18 th	1 st	Discussion of Probable Questions and Answers (3)	
	2 nd	Discussion of Probable Questions and Answers(4)	
	3 rd	Discussion of Probable Questions and Answers (5)	
	4 th	Discussion of Probable Questions and Answers (6)	