

LESSON PLAN
AUTOMOBILE ENGINEERING DEPARTMENT
B.O.S.E CUTTACK
NAME OF THE FACULTY - NILAKANTHA NAYAK
SUBJECT NAME - AUTOMOTIVE ENGINE (60 PERIOD)
SEMESTER - 4TH

WEEKS & DATE	NO. OF PERIODS AVAILABLE	TOPICS TO BE COVERED	TOPICS ACTUALLY COVERED	IF ANY SHOT FALL	REASON OF SHOT FALL	HOW TO MAKE UP	REMARKS /SIGNATURE WITH DATE
1 ST 19.04.2021 TO 24.04.2021	04	1 Petrol engine and its constructional details 1.1 Working principle of two stroke & four stroke petrol engine. 1.2 Constructional details of petrol engine with materials. Engine components like piston, cylinder block, valve, connecting rod, crank shaft, crank slot.	introduction 1.1 working principle of 2-s engine. 1.1 captions and completed.	Yes	holiday off/on/abt.	By taking extra class.	AB 19/04/2021. AB 20/04/2021. AB 21/04/2021.
2 ND 26.04.2021 TO 01.05.2021	04	1.3 Cylinder arrangement: inline and v-type engine firing order of multi cylinder engine. 1.4 Side valve actuating mechanism over head valve actuating mechanism. 1.5 I, F & T type valve arrangement, valve clearance.	1.2 starts constructional details. 1.2 completed. 1.3 starts and completed. 1.4 starts & completed.	NA	NA	NA	AB 22/04/2021. AB 23/04/2021. AB 24/04/2021. AB 25/04/2021.
3 RD 03.05.2021 TO 08.05.2021	04	1.6 Timing gear, vibration damper, inlet & exhaust manifold. 2. Diesel engine and its constructional details 2.1 Working principle two strokes diesel engine. 2.2 Types, advantages & limitations of diesel engine over petrol engine.	1.5 starts 1.5 completed and 1.6 starts 1.6 completed ch-2 2.1 working principle of 2s engine.	NA	NA	NA	AB 26/05/2021. AB 27/05/2021. AB 28/05/2021. AB 29/05/2021.

4 TH 10.05.2021 TO 15.05.2021	04	2.3 Function & types of combustion chamber. 2.4 Direct injection type combustion chamber, pre combustion chamber, turbulence chamber. Their advantages & disadvantages.	2.01 completed. 2.02 starts & completed 2.03 starts i.e. Functions & types of C.C 2.03 completed & 2.04 starts	NA	NA	NA	NA 18/05/21 19/05/21 20/05/21 21/05/21
5 TH 17.05.2021 TO 22.05.2021	04	3. Performance of I.C engine 3.1 Define mechanical efficiency, Indicated thermal efficiency, Relative Efficiency, brake thermal efficiency overall efficiency Mean effective pressure & specific fuel consumption. 3.2 Define air-fuel ratio & calorific value of fuel.	2.04 continue --- 2.04 completed. 3.1 Performance of I.C engine.	Yes		By taking extn class.	18/05/21 19/05/21 20/05/21 21/05/21
6 TH 24.05.2021 TO 29.05.2021	04	3.3 Morse - test and preparation of heat balance sheet 3.4 Work out problems to determine efficiencies & specific fuel consumption	3.01 continue --- 3.01 do - 3.01 - do -	Yes Yes	due to some personal reasons -do -	By taking extn class. -do -	18/05/21 19/05/21 20/05/21 21/05/21
7 TH 31.05.2021 TO 05.06.2021	04	Cont.....3.4 Work out problems to determine efficiencies & specific fuel consumption	3.01 completed. 3.02 starts & completed 3.03 starts. 3.03 completed.	NA	NA	NA	18/05/21 19/05/21 20/05/21 21/05/21

		fuel lines, fuel pumps, (mechanical & electrical) fuel filter.					
12 TH 05.07.2021 TO 10.07.2021	04	4.3 Requirements and working principle of carburetors. Air fuel ratios for different conditions in carburetors. 4.4 Circuits of various types of carburetor, like down draught carburetors, side draught carburetor. 4.5 Description of motorcycle carburetor 4.6 line diagram of diesel engine fuel supply system	6.2 Types of lubrication system. 6.2 continue... 6.2 completed 6.3 Parts of lubrication system.	NA	NA	NA	NA NA NA NA
13 TH 12.07.2021 TO 17.07.2021	03	4.7 Requirements and types of fuel injection system. 4.8 Air injection, solid injection individual pump system injection common rail system injection 4.9 TBL system MPFI system PFI system ECM control functions	6.3 continue... 6.3 completed - 6.4 oil filter 6.4 continue...	NA	NA	NA	NA NA NA NA
14 TH 19.07.2021 TO 24.07.2021	03	4.10 Constructional details of fuel pump 4.11 Fuel injectors. 4.12 Governing system of fuel: Mechanical governor, pneumatics governor.	6.4 completed and 4.1 completed 4.2 starts... 4.3 completed 4.3 starts	NA	NA	NA	NA NA NA NA
15 TH 26.07.2021 TO 31.07.2021	04	Continue.....4.12 Hydraulic governor	4.3 continue... 4.3 completed. 4.4 completed 4.5 & 4.6 starts & completed	NA	NA	NA	NA NA NA NA

16 TH 02.08.2021	04	Revision of syllabus and Discussion, MCQ Test.	4.7 injection system starts & completed 4.8 starts & completed 4.9 MPFI Details study. 4.10 Details of FI Pump	NA	NA	NA	PR 02/08/21 PR 03/08/21 PR 04/08/21 PR 05/08/21 PR 06/08/21 PR 07/08/21
17 TH 09.08.2021	03	Revision of syllabus and Discussion, MCQ Test. Previous year Question discussion.	4.11 and 4.12 starts & completed. 4.12 study of Hydraulic governor. & class test MCQ type.	NA	NA	NA	PR 09/08/21 PR 10/08/21 PR 11/08/21 PR 12/08/21 PR 13/08/21

LESSON PLAN

AUTOMOBILE ENGINEERING DEPARTMENT

B.O.S.E CUTTACK

NAME OF THE FACULTY – **NILAKANTHA NAYAK**

SUBJECT NAME – AUTOMOTIVE SYSTEM & HEAVY EQUIPMENTS (60 PERIOD)

SEMESTER – 6TH

SUMMER-2020-2021

WEEKS & DATE	NO. OF PERIODS AVAILABLE	TOPICS TO BE COVERED	TOPICS ACTUALLY COVERED	IF ANY SHOT FALL	REASON OF SHOT FALL	HOW TO MAKE UP	REMARKS /SIGNATURE WITH DATE
1 ST 19.04.2021 TO 24.04.2021	04	1.FRONT AXLE Introduction & study of front axle assemblies. Front axle function, construction & Types of stub axle Front wheel assembly 2.STEERING & STEERING GEOMETRY Introduction of steering system,	Introduction of Automobile system. study of front axle assemblies	Yes Yes	holiday. attended workshop	 system extra class - do -	प्रमाण प्रमाण प्रमाण प्रमाण
2 ND 26.04.2021 TO 01.05.2021	04	function of steering Principle of correct steering & Components of steering system & Types of steering gear. Steering geometry i.e. camber, caster, king-pin Inclination, understeer, oversteer, combined angle Toe-in Toe-out, wheel alignment	Constructional details of front axle. Types of stub axle and front wheel assembly. Introduction of steering system function of S.S.	Yes	Due to above reason.		प्रमाण प्रमाण प्रमाण प्रमाण
3 RD 03.05.2021 TO 08.05.2021	04	& effects of incorrect wheel alignment, steering turning angle and turning radius. 3. SUSPENSION SYSTEM Introduction & function & requirement of suspension system. Types of suspension spring like leaf spring, coil spring, rubber torsion unit,	Principle of correct steering. Component of steering system Types of steering gear - do -	-	NA	-	प्रमाण प्रमाण प्रमाण प्रमाण

4 TH 10.05.2021 TO 15.05.2021	04	Torsion bar. Types of suspension system such as.. independent suspension system, rigid axle Suspension system, its advantages and disadvantages. Stabilizer bar & shock absorber.	Steering geometry ie caster, camber etc. - do - - wheel test wheel alignment and effect of incorrect wheel alignment.	NA		ND ND ND ND ND
5 TH 17.05.2021 TO 22.05.2021	04	4. BRAKE SYSTEM Introduction, Principle of operation and requirements of brakes. Types of brakes such as drum brakes and its leading & trailing shoes, Disc brakes.	Steering geometry ie caster, camber etc. - do - - introduction of suspension system, types, function. - types of suspension springs - do -	NA		ND ND ND ND ND
6 TH 24.05.2021 TO 29.05.2021	04	Brake fade. Hydraulic brakes and its components like master cylinder, tandem master cylinder, wheel cylinder, brake fluid and brake fluid grades.	types of suspension system. Advantages & disadvantages of stabilizer bars.	Personal and health issues - do -	Personal issues by talent & extra classes. - do -	ND ND ND ND ND
7 TH 31.05.2021	04	Advantages and disadvantages of hydraulic brakes. Power brake types,	shock absorbers & previous discussion.	NA		ND ND

TO		working and construction of air brake & hand brake. Adjustment and bleeding of brake.	introduction of brake theorie of operation, requirements. types of brake such as down brake	—	NA	—	10 माफ़र 11 माफ़र
8 TH	04	Common brake problems. Anti-lock braking system	Disc brake Hydraulic brake system do - and components of Hy. brake	—	NA	—	11 माफ़र 12 माफ़र
TO		5. WHEEL & TYRES Introduction Basic construction of a tyre. Tyre dimension Classification of tyre, advantages and disadvantages of radial ply tyres over cross ply tyre.	tandem master cylinder & wheel cylinder do - & finished.	—	NA	—	12 माफ़र 13 माफ़र
9 TH	04	Tyre size designation Different types of tyre damages Wheel, and its type Wheel dimensions Wheel designation	Brake fluid & brake brake fluid grade. & A.P.S. & S.P.S. oil Hydraulic brake. power brake system.	—	NA	—	13 माफ़र 14 माफ़र
TO		6. CHASSIS & HEAVY EQUIPMENTS Introduction and lay out of chassis showing its main components. Types of chassis,	power brake system. A.P.S. brake & hand brake adjustment & bleeding common brake problem etc.	—	NA	—	14 माफ़र 15 माफ़र
10 TH	04	frame and important chassis layouts. Tractor and its construction, Classification, construction and description of	Anti-lock braking system repeat of Hydraulic brake components. introduction of wheels tyre & tyre construction.	—	NA	—	15 माफ़र 16 माफ़र
TO							16 माफ़र

26.05.2021		dump truck,	Coast... tyre construction and parts.		NA		①
11 th 28.06.2021	02	grader, road roller, dozer, loader, cranes, scraper Doubt clearing class	Again repeat of tyre construction & dimensions.		NA		① ②
29.06.2021							① ②
30.06.2021		VST.	Describe about the Radial tyre Cross tyre.		NA		① ②
12 th 01/07/2021		Tyre degradation and tyre damage.	Described about the degradation of tyre damage.		NA		① ②
02/07/2021	02	overall discussion of chapter wheel and tyre.	Discussion about the previous class.		NA		① ②
13 th 06/07/2021		wheel dimension & designation of wheels & types	wheel dimensions & designation of wheel.		NA		① ②
07/07/2021	04	wheel constructional details.	constructional details of tyre.		NA		① ② ③
08/07/2021		Doubt clearing class	Doubt clearing class				① ② ③
09/07/2021		Completed ch. tyre & wheel	ch. complete.				① ② ③
14 th 13/07/2021		Introduction of chassis	Introduction of chassis				① ② ③
14/07/2021	04	frame and layout of chassis	frame & layout of tractor		NA		① ② ③
15/07/2021		Tractor and its construction	construction of tractor				① ② ③
16/07/2021		contin... tractor	do				① ② ③

15TH

<p>20/07/2021 27/07/2021 29/07/2021 24/08/2021</p>	<p>04</p>	<p>Construction & Description of dump truck Conti - dump truck & finished. Grader Road Roller</p>	<p>Explained about the dump truck & types. Explained about the dump truck & types. Construction of Grader Construction of Road Rollers</p>	<p>NA</p>	<p>—</p>	<p>20/07/21 27/07/21 29/07/21 24/08/21</p>
<p>27/08/21 29/08/21 30/08/21</p>	<p>04</p>	<p>Constructional details of dozer Loader and Cranes Scraper details of construction.</p>	<p>Constructional details of dozer. Constructional details of loader. Constructional details of cranes and its type.</p>	<p>NA</p>	<p>—</p>	<p>27/08/21 29/08/21 30/08/21</p>
<p>02/08/2021 04/08/2021 09/08/2021</p>		<p>Revision of dozer. Class test MCQ & Descriptive type</p>	<p>Constructional details of Scraper. Revision of class. Class test MCQ Type.</p>	<p>NA</p>	<p>—</p>	<p>02/08/21 04/08/21 09/08/21</p>