LESSON PLAN

AUTOMOBILE ENGINEERING DEPARTMENT

B.O.S.E CUTTACK

NAME OF THE FACULTY – **NILAKANTHA NAYAK**

SUBJECT NAME –THERMAL ENGINEERING -I

SEMESTER – 3RD

WEESKS & DATE	NO. OF PERIODS AVILABLE	TOPICS TO BE COVERED	TOPICS ACTUALLY COVERED	IF ANY SHOT FALL	REASON OF SHOT FALL	HOW TO MAKE UP	REMARKS /SIGNATURE WITH DATE
1ST 01.09.2020 02.09.2020 03.09.2020	03	**1. Thermodynamic concept & Terminology** 1.1 Thermodynamic Systems (closed, open, isolated) 1.2 Thermodynamic properties of a system (pressure, volume, temperature, entropy, enthalpy, Internal energy and units of measurement). 1.3 Intensive and extensive properties	~~Introduction to thermodynamics~~ 1.1 completed. 1.2 starts & Completed	NA	NA	NA	1/9/20 2/9/20 3/9/20
2ND 07.09.2020 08.09.2020 09.09.2020 10.09.2020	04	1.4 Define thermodynamic processes, path, cycle, state, path function, point function. 1.5 Thermodynamic Equilibrium. 1.6 Quasi-static Process. 1.7 Conceptual explanation of energy and its sources	1.3 starts & completed 1.4 starts 1.4 Completed & 1.5 starts 1.5 covered and 1.6 starts 1.6 covered and 1.7 also covered.	NA	NA	NA	4/9/20 8/9/20 9/9/20 10/9/20
3RD 14.09.2020 15.09.2020 16.09.2020 17.09.2020	04	1.8 Work, heat and comparison between the two. 1.9 Mechanical Equivalent of Heat. 1.10Work transfer, Displacement work. 2. Laws of Thermodynamics	1.8 starts & covered. 1.9 starts & Covered. 1.10 starts & covered. 2.	NA	NA	NA	14/9/20
		2.1 State & explain Zeroth law of	2.1 Starts & Covered.				15/9/20

4TH 18.09.2020 21.09.2020 22.09.2020 23.09.2020	04	thermodynamics. 2.2 State & explain First law of thermodynamics. 2.3 Limitations of First law of thermodynamics 2.4 Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor)	2.2 Started & Covered. 2.3 Started & Covered. 2.4 Started & Cont. 2.4 Cont....	NA	NA	NA	
5TH 24.09.2020 28.09.2020 29.09.2020 30.09.2020	04	2.4 Will continue 2.4 Will continue 2.5 Second law of thermodynamics (Claucius & Kelvin Plank statements).	2.4 Covered 2.5 Started.... 2.5 Cont'd.... 2.5 Covered	NA	NA	NA	
6TH 01.10.2020 05.10.2020 07.10.2020 08.10.2020	04	2.6 Application of second law in heat engine, heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical)	2.6 Started 2.6 Continue -- do -- do --	NA	NA	NA	
7TH 12.10.2020 13.10.2020	04	**3. Properties Processes of perfect gas** 3.1 Laws of perfect gas: Boyle's law, Charle's law, Avogadro's law,. Dalton's law of partial pressure, Guy lussac law, General gas equation,	3.1 Started & Cont'd - do -	NA	NA	NA	

14.10.2020 15.10.2020		characteristic gas constant, Universal gas constant 3.2 Explain specific heat of gas (Cp and Cv) .	3.1 do is completed.	NA	NA	NA	
8TH 19.10.2020 20.10.2020 21.10.2020 22.10.2020	04	3.3 Relation between Cp & Cv. 3.4 Enthalpy of a gas. 3.5 Work done during a non- flow process. 3.6 Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)	3.2 3.3 starts & Covered 3.4 starts & Covered.	Yes	Puja holiday	By taking extra class	
9TH 27.10.2020 28.10.2020 29.10.2020	03	3.7 Solve simple problems on above. 3.7 Do..... 3.7 Do.....	- NA -	Yes	do	do	
10TH 02.11.2020 03.11.2020 04.11.2020 05.11.2020	04	3.8 Free expansion & throttling process. **4. Internal combustion engine** 4.1 Explain & classify I.C engine. 4.2 Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM. 4.3 Explain the working principle of 2-stroke	3.5 starts & completed. 3.6 starts & Contd... do	NA	NA	NA	

11TH 09.11.2020 10.11.2020 11.11.2020 12.11.2020	04	4.3 Working principle of 4- stroke engine 4.3 C.I & S.I engine. 4.4 Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.	3.6 Continue ... 3.6 do ... 3.6 do ...	AA	NA	NA	
12TH 16.11.2020 17.11.2020 18.11.2020 19.11.2020	04	**5. Gas Power Cycle** 5.1 Carnot cycle 5.2 Otto cycle. 5.3 Diesel cycle. 5.4 Dual cycle.	3.7 Starts 3.7 Continue.. 3- Passed & covered.	NA	NA	NA	
13TH 23.11.2020 24.11.2020 25.11.2020 26.11.2020	04	5.5 Solve simple numerical. 5.5 Solve simple numerical. 5.5 Solve simple numerical. 5.5 Solve simple numerical.	4.1 Starts & Covered. 4.2 starts & Covered 4.3 Starts & Conti. 4.3 do covered	NA	NA	NA	
14TH 30.11.2020 01.12.2020 02.12.2020 03.12.2020	04	5.5 Solve simple numerical. 5.5 Solve simple numerical. 5.5 Solve simple numerical. 5.5 Solve simple numerical.	4.4 starts & Covered. 5.1 Start & Covered 5.2 starts & Covered		NA	NA	
15TH 07.12.2020 0812.2020 09.12.2020 10.12.2020	04	**6. Fuels and Combustion** 6.1 Define Fuel. 6.2 Types of fuel. 6.3 Application of different types of fuel. 6.4 Heating values of fuel.	5.3 starts & covered 5.4 starts & Covered 5.5 starts & Conf. 5.5 do - 5.5 do - 5.5 do ...	NA	NA	NA	

16TH 14.12.2020	04	6.5 Quality of I.C engine fuels.	5.5 Continue -				
15.12.2020		6.5 Octane number, Cetane number.	5.5 continue -	NA	NA	NA	
16.12.2020		Discussion of previous chapter	5.5 Continue -				
17.12.2020		Discussion of previous chapter	5.5 Continue -				
17TH 21.12.2020	04	Discussion of previous chapter.	5.5 covered.				
22.12.2020		Previous year questions discussion.					
23.12.2020		Surprise test	6.1 starts & covered	NA	N. A	NA.	
24.12.2020		VST	6.2 starts & covered.				
			6.3 starts & Covered				
			6.4 starts & covered:	NA	NA	NA	
			6.5 starts. Confin				
			6.5 Continue - -				
			6.5 Covered				
			Doubt clearing class	NA	NA	NA	
			- do -				

LESSON PLAN 2020-21

SEMESTER- 5TH (AUTOMOBILE ENGG.)

SUBJECT – AUTOMOTIVE TRANSMISSION

FROM 01.09.2020

NAME OF THE TEACHING FACULTY-
NILAKANTHA NAYAK

BHUBANANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

BRANCH -AUTOMOBILE ENGINEERING **SUBJECT NAME** - AUTOMOTIVE TRANSMISSION

NAME OF TEACHING FACULTY – NILAKANTHA NAYAK **SEMESTER** – 5TH **TOTAL PERIODS**-60 **CLASS ALLOTED PER WEEK**-04

WEEK & DATE		NO. OF PERIODS ALLOTTED	TOPICS TO BE COVERED	TOPICS ACTUALLY COVERED	SHORTFALL IF ANY	REASON OF SHORTFALL	HOW TO MAKE UP	REMARKS/ SIGNATURE WITH DATE
1st	01.09.2020	03	**1 Clutch** 1.1Introduction, requirement of clutch,	1.1 started & continue...	NA	NA	NA	1/9/20
	02.09.2020		1.1 types of clutch.	1.1 Completed	do	do	do	2/9/2020
	03.09.2020		1.2 Clutch operation.	1.2 Completed	do	do	do	3/9/2020
2nd	07.09.2020	04	1.3 Clutch components, clutch facing		Yes	Due to corona virus awareness	By taking extra Class	4/9/2020
	08.09.2020		1.4 Clutch problem &adjustment	1.3 starts & Completed	—	NA	—	7/9/2020
	09.09.2020		1.5 Fluids fly wheel &coupling	1.5 starts Fluid flywheel				8/9/2020
	10.09.2020		**2. Gear Box** 2.1 Introduction, functions & types of transmission.	1.5 Completed.	—	NA	—	10/9/2020.
3rd	14.09.2020	04	2.2 Sliding mesh gear box	2.1 starts & cont.				14/9/2020
	15.09.2020		2.2 constant mesh gearbox	2.1 Completed	Yes	Due to lack of class preview		15/9/2020
	16.09.2020		2.3 Epicyclical gear box overdrive.	2.2 Starts & completed				16/9/20
	17.09.2020		2.4 Free-wheel drive, selector mechanism.	2.3 starts & Completed	—	NA	—	17/9/20
4th	18.09.2020		2.5 Fluid torque converter.	2.4 Starts & continue.	—	NA	—	18/9/20.

	21.09.2020		**3. Propeller shaft** 3.1 Introduction definition.	3rd classes completed	—	NA	—	
	22.09.2020	04	3.1Types of propeller shaft	3.1 starts				
	23.09.2020		3.2 Universal joints.	3.1 completed	—	NA	—	
5th	24.09.2020		3.2 Types of universal joint.	3.2 starts & completed				
	28.09.2020		3.2 Types of universal joint.		—	NA	—	
	29.09.2020		3.3 Sliding joint.	Practical Classes starts & completed.				
	30.09.2020	04	**4. Differential** 4.1 Function of differential gear box.	4.1 starts & continue	—	NA	—	
6th	01.10.2020		4.2 Types of differential	4.1 Covered.				
	05.10.2020		4.2 Types of differential	4.2 covered.	—	NA	—	
	07.10.2020	04	4.3 Constructional details of a differential	4.3 covered.	—	NA	—	
	08.10.2020		4.4 Study & inspection of differential.	4.4 starts & covered.	—	NA	—	
7th	12.10.2020		4.4 Study & inspection of differential.	4.4 Covered.	—	NA	—	
	13.10.2020	04	**5. Rear Axle** 5.1 Definition of rear axle, supporting of rear axle.	NA	—	NA	—	
	14.10.2020		5.2 Rear axle drives such as Hotchkiss drive.	NA	—	NA	—	
	15.10.2020		5.2 Rear axle drives such as torque tube drive etc.	5.1 starts & covered.	—	NA	—	
8th	19.10.2020		5.3 Types of rear axle.	5.2 starts & covered		—		
	20.10.2020		5.3 Types of rear axle.	5.3 starts	—	NA	—	
	21.10.2020	04	5.4 Rear axle casing.	5.3 covered.				
	22.10.2020		5.4 Rear axle casing.		Yes	PUJA HOLIDAY		
9th	27.10.2020	03	**6. Two wheeler** 6.1 Power transmission system of moped.		Yes			
	28.10.2020		6.2 Power transmission		—	NA	—	

			system of scooter					
	29.10.2020		6.2 Power transmission system of scooter	- do -	- do -	NA	NA -	
10th	02.11.2020	04	6.3 Power transmission system of motorcycle.					
	03.11.2020		6.3 Power transmission system of motorcycle.		NA	NA	NA	
	04.11.2020		6.4 Power transmission system of bullet.	5.4 contd...				
	05.11.2020		6.4 Power transmission system of bullet.	5.4 covered.	— NA	—	NA	
11 th	09.11.2020	04	**7. Performance of Automobile** 7.1 Power for propulsion resistances for vehicle.	6.1 starts & covered.	—	NA	—	
	10.11.2020		7.2 Traction & tractive effort, road performance curves	6.2 starts & Continue..	—	NA	—	
	11.11.2020		7.2 Traction & tractive effort, road performance curves	6.2 covered	—	NA	—	
	12.11.2020		7.3 Acceleration grad ability & draw-bar pull.	6.3 starts & covered.	—	NA	—	
12th	16.11.2020	04	7.3 Acceleration grad ability & draw-bar pull.	6.4 starts -	—	NA	—	
	17.11.2020		7.3 Acceleration grad ability & draw-bar pull	6.4 covered.	—	NA	—	
	18.11.2020		7.3 Acceleration grad ability & draw-bar pull	7.1 starts & cont-	—	NA	—	
	19.11.2020		7.4 Calculation of equivalent weight.	7.1 covered.	—	NA	—	
13th	23.11.2020	04	7.4 Calculation of equivalent weight.	7.2 starts	—	NA	—	
	24.11.2020		7.4 Calculation of	7.2 covered	—	NA	—	

			equivalent weight.					
	25.11.2020		7.4 Calculation of equivalent weight.	7.3 starts & covered	—	NA	—	25/11/20.
	26.11.2020		7.4 Calculation of equivalent weight.	7.4 starts	—	NA	—	26/11/20
14 th	30.11.2020	04	7.4 Calculation of equivalent weight.	7.4 Continue.	—	NA	—	30/11/20.
	01.12.2020		7.5 Calculation of maximum traffic effort	7.4 continue	—	NA	—	1/12/20
	02.12.2020		7.5 Calculation of maximum traffic effort	7.4 Contin	—	NA	—	2/12/20
	03.12.2020		7.5 Calculation of maximum traffic effort	7.4 continue	—	NA	—	3/12/20
15th	07.12.2020	04	7.5 Calculation of maximum traffic effort	7.4 covered	—	NA	—	7/12/20
	08.12.2020		Previous year questions paper discussion.	7.5 starts	—	NA	—	8/12/20
	09.12.2020		Previous year questions paper discussion.	7.5 continue.	—	NA	—	9/12/20
	10.12.2020		Previous year questions paper discussion.	7.5 continue	—	NA	—	10/12/20
16th	14.12.2020	04	Doubt clearing class	7.5 covered	—	NA	—	14/12/20
	15.12.2020		Doubt clearing class	Doubt clearing,	—	NA	—	15/12/20
	16.12.2020		Doubt clearing class	do				16/12/20
	17.12.2020		Class test chapter 1-2	do	—	NA	—	17/12/20.
17th	21.12.2020		Class test chapter 3-4	Doubt clearing class				21/12/20
	22.12.2020		MCQ Test chapter 5-6	Revision of previous class				22/12/20
	23.12.2020		MCQ TEST	Doubt clearing class		NA	—	23/12/20
	24.12.2020		DESCRITIVE TEST	Previous year Questions Discussion.				24/12/20.