SEMESTER- 5TH(AUTOMOBILE ENGG.)

SUBJECT - AUTOMOBILE COMPONENT DESGN

FROM 01.09.2020

NAME OF THE TEACHING FACULTY- KULADEEP MOHAPATRA

BHUBANANDA ORISSA SCHOOL OF ENGINEERING, CUTTACK

DEPT - AUTOMOBILE ENGINEERING

SUBJECT NAME – AUTOMOBILE COMPONENT DESIGN**(Th.5)**

SEMESTER – 5TH

NAME OF TEACHING FACULTY - KULADEEP MOHAPATRA

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	04	1.1 Introduction to design 1.2 Classification of design	1.1 and 1.2 completed	Nil	N.A	N.A	Kuldeep 01.9.2020
	03.09.2020		1.3 Design consideration	1.3 completed	Nil	N.A	N.A	Kuldeep 03.9.2020
	03.09.2021		1.4 Design procedure	1.4 completed	Nil	N.A	N.A	Kuldeep 02.9.2020
	05.09.2020		1.5 stress analysis	1.5 completed	Nil	N.A	N.A	Kuldeep 05.9.2020
2nd	08.09.2020	04	1.5.1 Types of external loads	1.5.1 completed	Nil	N.A	N.A	Kuldeep 08.9.2020
	10.09.2020		1.5.2 Types of induced stresses : tensile,	1.5.2 continue	Nil	N.A	N.A	Kuldeep 10.9.2020

			compressive, shear crushing and bearing pressure					
	10.09.2020		1.5.2 Bending, torsion, thermal stress, creep, proof stresses, resilience, principal stresses.	1.5.2 completed	Nil	N.A	N.A	Anukeep 10.9.2020
	12.09.2020		1.5.3 Stress strain diagram for ductile material and its importance.	1.5.3 continue	Nil	N.A	N.A	Anukeep 12.9.2020
3rd	15.09.2020	02	1.5.3 stress strain diagram for brittle material and its importance.	1.5.3 completed	Nil	N.A	N.A	Anukeep 15.9.2020
	19.09.2020		1.5.4 Variable stresses machine parts, fatigue and endurance limit.	1.5.4 continue	Nil	N.A	N.A	Anukeep 19.9.2020
4th	22.09.2020	04	1.5.4 Stress time diagrams for variable stresses.	1.5.4 completed	Nil	N.A	N.A	Anukeep 22.9.2020
	24.09.2020		1.5.5 Working stresses for static load, variable or fatigue load	1.5.5 completed	Nil	N.A	N.A	Anukeep 24.9.2020
	24.09.2020		1.5.6 factor of safety and selection of factor of safety	1.5.6 completed	Nil	NA	N.A	Anukeep 24.9.2020

	26.09.2020		1.5.7 Stress concentration causes and remedies.	1.5.7 completed	Nil	N.A	N.A	Kuldeep 26.9.2020
5th	29.09.2020	04	1.5.8 Introduction to theories of failure, maximum principal theory.	1.5.8 continue	Nil	N.A	N.A	Kuldeep 29.9.2020
	01.10.2020		1.5.8 Maximum shear stress theory, distribution energy theory.	1.5.8 completed	Nil	N.A	N.A	Kuldeep 01.10.2020
	01.10.2020		1.5.9 Selection of material and justifications of automobile components, advanced materials for automotive components.	1.5.9 completed	Nil	N.A	N.A	Kuldeep 01.10.2020
	03.10.2020		1.6 Concept of standardization, preferred numbers and inter chargeability in design practices.	1.6 completed	Nil	N.A	N.A	Kuldeep 03.10.2020
6th	06.10.2020	04	1.6.1 Common types of fastener with their applications-	1.6.1 completed	Nil	N.A	N.A	Kuldeep 06.10.2020

			through bolts ,tap bolts, top bolts, studies cap screws and machine screws, designation of screw thread according to 1.5, stresses in screw fosterers, bolts of uniform strength.					
	08.10.2020		1.6.2 Bearings - classification, location in automobile systems and selection of bearings.	1.6.2 completed	Nil	N.A	N.A	Anusleep 08.10.2020
	08.10.2020		1.6.3 Post design aspects ergonomic aspect aesthetic consideration (shape, color, surface finish) for automobile.	1.6.3 completed	Nil	N.A	N.A	Anusleep 08.10.2020
	10.10.2020		2.1 Design of socket and spigot type of cotter joint.	2.1 completed	Nil	N.A	N.A	Anusleep 10.10.2020
7th	13.10.2020	04	2.2 Design of knuckle joint.	2.2 completed	Nil	N.A	N.A	Anusleep 13.10.2020

	15.10.2020		2.3 Design of turnbuckle.	2.3 completed	Nil	N.A	N.A	Anudeep 15.10.2020
	15.10.2020		2.5 Application of above machine elements in an automobile.	2.5 completed	Nil	N.A	N.A	Anudeep 15.10.2020
	17.10.2020		3.1 Conceptual understanding of shaft, axle and spindle	3.1 completed	Nil	N.A	N.A	Anudeep 17.10.2020
8th	20.10.2020	01	3.2 Design of shaft for torsion, rigidity	3.2 continue	Nil	N.A	N.A	Anudeep 20.10.2020
9th	03.11.2020	03	3.2 Design of shaft for bending and combined banding and torsion.	3.2 completed	Nil	N.A	N.A	Anudeep 03.11.2020
	05.11.2020		3.3 Compression of solid and hollow shafts	3.3 completed	Nil	N.A	N.A	Anudeep 05.11.2020
	05.11.2020		3.4 Design of propeller shaft ,whirling and critical speed.	3.4 completed	Nil	N.A	N.A	Anudeep 05.11.2020
	07.11.2020		3.5 Design of rear axle. Types of keys design of sunk rectangular key, woodruff key, effect of keyways on shaft.	3.5 completed	Nil	N.A	N.A	Anudeep 07.11.2020

10th	10.11.2020	04	3.6 Design of coupling muff, flange and bush pin type flexible.	3.6 completed	Nil	N.A	N.A	Dinesh 10.11.2020
	12.11.2020		4.1 Types of levers 4.2 Design rocker arm	4.1 and 4.2 completed	Nil	N.A	N.A	Dinesh 12.11.2020
	12.11.2020		4.3 Design of bell crank lever	4.3 completed	Nil	N.A	N.A	Dinesh 12.11.2020
	14.11.2020		4.4 hand lever	4.4 completed	Nil	N.A	N.A	Dinesh 14.11.2020
11 th	17.11.2020	04	4.5 pedals for rectangular cross-section and fulcrum pinon.	4.5 completed	Nil	N.A	N.A	Dinesh 17.11.2020
	19.11.2020		5.1 Design of clutch- single plate.	5.1 continue	Nil	N.A	N.A	Dinesh 19.11.2020
	19.11.2020		5.1 Design of multi plate .	5.1 completed	Nil	N.A	N.A	Dinesh 19.11.2020
	21.11.2020		5.2 Teeth calculation gears for sliding meshing/ constant mesh gear box of given data.	5.2 completed	Nil	N.A	N.A	Dinesh 21.11.2020
12th	24.11.2020	04	5.3 Design of semi elliptical leaf spring, helical spring torsion and compression.	5.3 completed	Nil	N.A	N.A	Dinesh 24.11.2020
	26.11.2020		6.1 Data of engine					

			specifications and calculation of cylinder dimensions for given power.	6.1 completed	Nil	N.A	N.A	Kuldeep 26.11.2020
	26.11.2020		6.2 Design of cylinder head thickness and bolts.	6.2 completed	Nil	N.A	N.A	Kuldeep 26.11.2020
	28.11.2020		6.3 Design of valve seat and valve lift.	6.3 completed	Nil	N.A	N.A	Kuldeep 28.11.2020
13th	01.12.2020	04	6.4 Design of piston crown by bending strength and thermal considerations.	6.4 completed	Nil	N.A	N.A	Kuldeep 01.12.2020
	03.12.2020		6.5 Design of piston rings and skirt length	6.5 completed	Nil	N.A	N.A	Kuldeep 03.12.2020
	03.12.2020		6.6 Design of piston pin for bearing, bending and shear considerations.	6.6 completed	Nil	N.A	N.A	Kuldeep 03.12.2020
	05.12.2020		6.7 Design of connecting rod cross section(I - section)	6.7 completed	Nil	N.A	N.A	Kuldeep 05.12.2020
14 th	08.12.2020	04	6.8 Design of big end	6.8 continue	Nil	N.A	N.A	Kuldeep 08.12.2020
	10.12.2020		6.8 Design of cap and bolt	6.8 completed	Nil	N.A	N.A	Kuldeep 10.12.2020
	10.12.2020		6.9 Design of					

			overhung crankshaft.	6.9 completed	Nil	N.A	N.A	Kuldeep 10.12.2020
	12.12.2020		REVISION OF CHAPTER 1	Revision of chapter 1	Nil	N.A	N.A	Kuldeep 12.12.2020
15th	15.12.2020	04	DOUBT CLEARING OF CHAPTER 1	Doubt clearing class on chapter 1	Nil	N.A	N.A	Kuldeep 15.12.2020
	17.12.2020		REVISION OF CHAPTER 2	Revision of chapter 2	Nil	N.A	N.A	Kuldeep 17.12.2020
	17.12.2020		DOUBT CLEARING OF CHAPTER 2	Doubt clearing of chapter - 2	Nil	N.A	N.A	Kuldeep 17.12.2020
	19.12.2020		REVISION OF CHAPTER 3	Revision of chapter - 3	Nil	N.A	N.A	Kuldeep 19.12.2020
16th	22.12.2020	04	DOUBT CLEARING OF CHAPTER 3	Doubt clearing of chapter - 3	Nil	N.A	N.A	Kuldeep 22.12.2020
	24.12.2020		REVISION OF CHAPTER 4	Revision of chapter - 4	Nil	N.A	N.A	Kuldeep 24.12.2020
	24.12.2020		DOUBT CLEARING OF CHAPTER 4	Doubt clearing of chapter - 4	Nil	N.A	N.A	Kuldeep 24.12.2020
	26.12.2020		REVISION OF CHAPTER 5	Revision of chapter - 5	Nil	N.A	N.A	Kuldeep 26.12.2020
17TH	29.12.2020	04	DOUBT CLEARING OF CHAPTER 5	Doubt clearing of chapter - 5	Nil	N.A	N.A	Kuldeep 29.12.2020
	31.12.2020		REVISION OF CHAPTER 6	Revision of chapter - 6	Nil	N.A	N.A	Kuldeep 31.12.2020
	31.12.2020		DOUBT CLEARING OF CHAPTER 6	Doubt clearing of chapter - 6	Nil	N.A	N.A	Kuldeep 31.12.2020
DATE EXTENDED BY COUNCIL FROM 31.12.2020 TO 15.03.2021								
17TH	02.01.2021	01	1.1 Introduction to design 1.2 Classification of	1.1 and 1.2 completed	Nil	N.A	N.A	Kuldeep 02.1.2020

			design					
18TH	05.01.2021		1.3 Design consideration 1.4 Design procedure	1.3 and 1.4 completed	Nil	N.A	N.A	Kuyleep 05.1.2021
	07.01.2021		1.5 stress analysis 1.5.1 Types of external loads	1.5 and 1.5.1 completed	Nil	N.A	N.A	Kuyleep 07.1.2021
	07.01.2021		1.5.2 Types of induced stresses : tensile, compressive, shear crushing and bearing pressure. Bending, torsion, thermal stress, creep, proof stresses, resilience, principal stresses.	1.5.2 completed	Nil	N.A	N.A	Kuyleep 07.1.2021
	09.01.2021		1.5.3 Stress strain diagram for ductile material and its importance. stress strain diagram for brittle material and its importance.	1.5.3 completed	Nil	N.A	N.A	Kuyleep 09.1.2021
19TH	12.01.2021	02	1.5.4 Variable stresses machine parts, fatigue and endurance limit.	1.5.4 completed	Nil	N.A	N.A	Kuyleep 12.1.2021

			Stress time diagrams for variable stresses.					
	16.01.2021		1.5.5 Working stresses for static load, variable or fatigue load. 1.5.6 factor of safety and selection of factor of safety	1.5.6 and 1.5.7 completed	Nil	N.A	N.A	Kuyleep 16.1.2021
20TH	19.01.2021	04	1.5.7 Stress concentration causes and remedies. 1.5.8 Introduction to theories of failure, maximum principal theory.	1.5.7 completed and 1.5.8 continue	Nil	N.A	N.A	Kuyleep 19.01.2021
	21.01.2021		1.5.8 Maximum shear stress theory, distribution energy theory. 1.5.9 Selection of material and justifications of automobile components, advanced materials for automotive	1.5.8 completed and 1.5.9 completed	Nil	N.A	N.A	Kuyleep 21.1.2021

			components.					
	21.01.2021		1.6 Concept of standardization, preferred numbers and inter chargeability in design practices.	1.6 completed	Nil	N.A	N.A	Kuldeep 21.1.2021
	23.01.2021		1.6.1 Common types of fastener with their applications- through bolts ,tap bolts, top bolts, studies cap screws and machine screws, designation of screw thread according to 1.5, stresses in screw fosterers, bolts of uniform strength.	1.6.1 completed	Nil	N.A	N.A	Kuldeep 23.1.2021
21TH	28.01.2021	03	1.6.2 Bearings - classification, location in automobile systems and selection of bearings.	1.6.2 completed	Nil	N.A	N.A	Kuldeep 28.1.2021
	28.01.2021		1.6.3 Post design aspects ergonomic					

			aspect aesthetic consideration (shape, color, surface finish) for automobile.	1.6.3 completed	Nil	N.A	N.A	Anilkumar 28.1.2021
	30.01.2021		2.1 Design of socket and spigot type of cotter joint.	2.1 completed	Nil	N.A	N.A	Anilkumar 30.1.2021
22TH	02.02.2021	04	2.2 Design of knuckle joint. 2.3 Design of turnbuckle.	2.2 and 2.3 completed	Nil	N.A	N.A	Anilkumar 02.2.21
	04.02.2021		2.5 Application of above machine elements in an automobile. 3.1 Conceptual understanding of shaft, axle and spindle	2.5 and 3.1 completed	Nil	N.A	N.A	Anilkumar 04.2.2021
	04.02.2021		3.2 Design of shaft for torsion, rigidity, Design of shaft for bending and combined banding and torsion.	3.2 completed	Nil	N.A	N.A	Anilkumar 04.2.21
	06.02.2021		3.3 Compression of solid and hollow shafts. 3.4 Design of	3.3 and 3.4 completed	Nil	N.A	N.A	Anilkumar 06.2.2021

			propeller shaft ,whirling and critical speed.					
23TH	09.02.2021	04	3.5 Design of rear axle. Types of keys design of sunk rectangular key, woodruff key, effect of keyways on shaft.	3.5 completed	Nil	N.A	N.A	Anusree 09.2.2021
	11.02.2021		3.6 Design of coupling muff , flange and bush pin type flexible.	3.6 completed	Nil	N.A	N.A	Anusree 11.2.2021
	11.02.2021		4.1 Types of levers 4.2 Design rocker arm	4.1 and 4.2 completed	Nil	N.A	N.A	Anusree 11.2.2021
	13.02.2021		4.3 Design of bell crank lever. 4.4 hand lever.	4.3 and 4.4 completed	Nil	N.A	N.A	Anusree 13.2.2021
24TH	18.02.2021	03	4.5 pedals for rectangular cross-section and fulcrum pinon.	4.5 completed	Nil	N.A	N.A	Anusree 18.2.2021
	18.02.2021		5.1 Design of clutch- single plate. Design of multi plate .	5.1 completed	Nil	N.A	N.A	Anusree 18.2.2021
	20.02.2021		5.2 Teeth calculation gears	5.2 completed	Nil	N.A	N.A	Anusree 20.2.2021

			for sliding meshing/ constant mesh gear box of given data.					
25TH	23.02.2021	04	5.3 Design of semi elliptical leaf spring, helical spring torsion and compression.	5.3 completed	Nil	N.A	N.A	Anilkumar 23.2.2021
	25.02.2021		6.1 Data of engine specifications and calculation of cylinder dimensions for given power.	6.1 completed	Nil	N.A	N.A	Anilkumar 25.2.2021
	25.02.2021		6.2 Design of cylinder head thickness and bolts. 6.3 Design of valve seat and valve lift.	6.2 and 6.3 completed	Nil	N.A	N.A	Anilkumar 25.2.2021
	27.02.2021		6.4 Design of piston crown by bending strength and thermal considerations.	6.4 completed	Nil	N.A	N.A	Anilkumar 27.2.2021
26TH	02.03.2021	04	6.5 Design of piston rings and skirt length. 6.6 Design of piston pin for bearing, bending and shear considerations.	6.5 and 6.6 completed	Nil	N.A	N.A	Anilkumar 02.3.2021

	04.03.2021		6.7 Design of connecting rod cross section(I - section)	6.7 completed	Nil	N.A	N.A	Dileep 04.3.2021
	04.03.2021		6.8 Design of big end, Design of cap and bolt	6.8 completed	Nil	N.A	N.A	Dileep 04.3.2021
	06.03.2021		6.9 Design of overhung crankshaft.	6.9 completed	Nil	N.A	N.A	Dileep 06.3.2021
27TH	09.03.2021	02	MOCK TEST	Test	Nil	N.A	N.A	Dileep 09/3/2021
	13.03.2021		MOCK TEST	Test	Nil	N.A	N.A	Dileep 13.3.2021