	GOVERNMENT POLYTECHNIC, NABARANGPUR			
Discipline:	D	EPARTMENT OF AUTOMOBILE ENGINEERING		
AUTOMOBILE ENGG.	Semester:	Name of the Teaching Faculty: RABINDRA PRASAD RATH		
Subject: TH2. AUTOMOTIVE SYSTEM & HEAVY EQUIPMENTS	No. of days/per week class allotted: 4	Semester From date: 04-02-2025 To Date: 17-05-2025 No. of Weeks: 15		
- Committee	CO1: Able to know about the function & assembly of Steering mechanism & steering			
COURSE OUTCOMES	CO2: Able to know about the suspension system and working Principle, types & functioning of brake.			
	CO3: Able to	know about the function of wheels, Tyres & designation, dimensions		
	CO4: Able to	know about the chassis of vehicle and various heavy equipment's.		
Week	Class Day	Theory/Practical Topics		
rap mages et hydraufic k handbrake.	1st sold disady	1. FRONT AXLE Introduction & study of front axle assemblies		
	2 ND	Front axle function, construction & Types of stub axle		
	3 RD	Front wheel assembly		
	4тн	Front wheel assembly		
		[20] - 그리트에서는 그는 맛있었습니다 그런 맛요하는 보이면서 하는 그리고 있는데 그리고 있다면서 하지만 하고 있습니다.		
2 ND	1st	2. STEERING & STEERING GEOMETRY Introduction of steering system, function of steering		
Andbunt 2	7 08810 1716 89)	Introduction of steering system, function of steering		
	North our so;	Principle of correct steering & Components of steering system & Types of steering gear. Steering geometry i.e. camber, caster, king-pin, Inclination, understeer, oversteer		
	2 ND	Introduction of steering system, 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,		

3 RD	A CPD	
HOYOV	1 ST	Toe-in Toe-out, wheel alignment & effects of incorrect wheel alignment, steering turning angle and turning radius
DMISH		
	2 ND	3. SUSPENSION SYSTEM
N(X	(GASAD)	Introduction & function & requirement of suspension system.
. 2928	3RD	Types of suspension spring like leaf spring, coil spring, rubber torsion unit, Torsion bar.
	4 TH	Types of suspension system such as independent suspension system, rigid axl
grinsole 2 or	dimenagni vini	
4 TH	1 ST	Suspension system, its advantages and disadvantages. Stabilizer bar & shock absorber.
	ing Principle	Of IX OMES. K 02: Able to know about the suspension system and world
	2 ND	4. BRAKE SYSTEM
	ic .ignamon. o	Introduction, Principle of operation and requirements of brakes.
	3 RD	Types of brakes such as drum brakes and its leading & trailing shoes, disc brakes. Brake fade.
	4 TH	Hydraulic brakes and its components like master cylinder, tandem master cylinder, allowed to the components like master cylinder, tandem master cylinder, allowed to the components like master cylinder, tandem master cylinder
		1. FRONT AXLE
5 TH	1 ^{sr}	brake fluid and brake fluid grades. Advantages and disadvantages of hydraulic brake.
	2 ND	Power brake types, working and construction of air brake & handbrake.
	3 RD	Adjustment and bleeding of brake.
	4 ^{7H}	Common brake problems. Anti-lock braking system.
6 TH	1 ST	brake fluid and brake fluid grades. Advantages and disadvantages of hydraulic brake.
	2 ND	Power brake types, working and construction of air brake & handbrake.
	of security sy	Principle of contect steering & Component
	3 RD	Power brake types, working and construction of air brake & handbrake.
	4 TH	Adjustment and bleeding of brake.
n. indorstaer	ar all al un	war Studies arometry i.e. camber, castar, king
7 TH	1ST	Common brake problems. Anti-lock braking system.
del alignanont.	2 ND	5. WHEEL & TYRES Introduction Basic construction of a tyre

		Introduction	
		Basic construction of a tyre	
	3 RD	Tyre dimension	
	4TH Asim qemb h	Classification of tyre, advantages and disadvantages of radial ply tyres overcross ply tyre. Tyre size designation	
	Neget group?	gill Kijasaification constitution and description of	
8 TH	1 ST	Classification of tyre, advantages and disadvantages of radial ply tyres over cross ply tyre.	
8тн		Classification of tyre, advantages and disadvantages of radial ply tyres over	
8тн		Classification of tyre, advantages and disadvantages of radial ply tyres over cross ply tyre. Tyre size designation	
8тн		Classification of tyre, advantages and disadvantages of radial ply tyres over cross ply tyre.	

	3 RD	Different types of tyre damages	
	craper	ition, construction and descriptions	
	4 TH	Wheel, and its type	ARTVADA E LANGERCA
	chiges.	aion, construction and description	15 ⁷⁰ Classifion
9 TH	1 ST	Wheel, and its type	
		on and description of dump track.	
	2 ND	Wheel dimensions	
		Wheel designation	
	3 RD	Wheel dimensions Wheel designation	
			NING RESOLUTION
	4 TH	6. CHASSIS & HEAVY EQUIP Introduction and lay out of chassi	s showing its main components.
10 TH	1st 1st	Introduction and lay out of chassi	s showing its main components.
	2 ND	Types of chassis	
	3 RD	THE HIBOMOTHA	APROOFE STATE
	NAHELS NAHELS	Types of frames	
	4 TH	Types of chassis	707132222
11 TH	1ST		
11"	LIHWAGO	Types of frames	W.H. COURSE
	2 ND	Types of important chassis layo	uts.
	MARKE		
	3 RD	Types of important chassis layo	uts.
	4 TH	Tractor and its construction	
		Transfer and its construction	The state of the s

		age to the plant	
12 TH	1 ^{8†}	Tractor and its construction	
	2 ND	Tractor and its construction	
es va kenti eta lis.	3 RD	Classification, construction and description of dump truck	
	4 TH	Classification, construction and description of dump truck	
ear pares one		the state of the s	
13 TH	1 ST	REVISION	
	2 ND	Classification, construction and description of grader.	
	3 RD	Classification, construction and description road roller.	
	4 TH	Classification, construction and description dozer.	
14 TH	1 ST	Classification, construction and description cranes	
17	2 ND	Classification, construction and description scraper.	
	3 RD	REVISION	
	4 TH	Classification, construction and description cranes	
15 TH	1 ST	Classification, construction and description scraper.	
13	2 ND	MONTHLY QUIZ	
	3 RD	construction and description of dump truck,	
	4 TH	construction and description of dump truck,	

LEARNING RESL.	NAME OF AUTHORS	TITLE OF THE BOOK	NAME OF THE PUBLISHER
	KIRPAL SINGH	AUTOMOBILE ENGINEERING VOL-1 & 2	STD PUBLISHERS
2_	RB GUPTA	AUTOMOBILE ENGINEERING	SATYA PRAKASHAN PUBLISHERS
<u>3</u>	Er. S.K. GUPTA	AUTOMOBILE ENGINEERING	S. CHAND
4	W.H. COURSE	AUTOMOTIVE CHASSIS & BODY	MC GRAWHILL
<u>5</u>	S.C. SHARMA	CONSTRUCTION EQUIPMENT AND ITS MANAGEMENT	SHARMA KHANNA PUBLISHER

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Sign. of Faculty concern

Academic Cordinator

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