



GOVERNMENT POLYTECHNIC, NABARANGPUR

DEPARTMENT OF AUTOMOBILE ENGINEERING

Discipline: AUTOMOBILE ENGG.	Semester: 5th	Name of the Teaching Faculty: RABINDRA PRASAD RATH
Subject: AUTOMOBILE ELECTRICITY	No. of days/per week class allotted: 4	Semester From date: 16-08-2024 To Date: 08-11-2024 No. of Weeks: 12
COURSE OUTCOMES	CO1: Types, construction, charging, testing and maintenance of battery. CO2: Construction, drive arrangement, principle and operation of starter. CO3: Principle, construction and maintenance of generator. CO4: Principal construction and maintenance of alternator. CO5: Types and components of ignition system. CO6: Setting and mechanism of light. CO7: Mechanism of several electrical accessories. CO8: Types of wiring and wiring diagram.	
Week	Class Day	Theory/Practical Topics
1 ST	1 ST	1. Storage Battery 1.1 Purpose and types of battery.
	2 ND	1.2 Construction capacity and charging of battery.
	3 RD	1.2 Construction capacity and charging of battery.
	4 TH	1.3 Testing servicing and maintenance of battery.
2 ND	1 ST	2. Starting System 2.1 Principle and construction of starter motor.
	2 ND	2.1 Principle and construction of starter motor.

	3 RD	2.2 Drive arrangement and control
	4 TH	2.3 Servicing and maintenance of starter motor.
3 RD	1 ST	REVISION
	2 ND	3. Generating system 3.1 Flemings right hand rule and Lenz's law.
	3 RD	3.1 Flemings right hand rule and Lenz's law.
	4 TH	3.2 Principle and constructional details of generator.
4 TH	1 ST	3.2 Principle and constructional details of generator.
	2 ND	3.3 Current and voltage regulator.
	3 RD	3.4 Cut-out relay, routine maintenance of generator.
	4 TH	REVISION
5 TH	1 ST	4. Alternator 4.1 Principle and construction of alternator.
	2 ND	4.1 Principle and construction of alternator
	3 RD	4.2 Maximum R.M.S. and average value.
	4 TH	4.3 Maintenance of alternator.
6 TH	1 ST	Principle and components induction coil, contact breaker, spark plug,
	2 ND	distributor and condenser of spark ignition system.
	3 RD	5.2 Electronics spark timing computer-controlled coil ignition system operation
	4 TH	5.2 Electronics spark timing computer-controlled coil ignition system operation
7 TH	1 ST	5.3 Electronics ignition system with distributor/distributor less.
	2 ND	5.3 Electronics ignition system with distributor/distributor less.
	3 RD	5.4 Types of ignition system such as: - Coil ignition system, magnet ignition system
	4 TH	, magnet ignition system

		electronics ignition system,
8 TH	1 ST	transistorized ignition system.
	2 ND	5.5 Ignition system servicing and fault diagnosis.

	3 RD	REVISION
	4 TH	
9 TH	1 ST	6. Light 6.1 Setting of headlights.
	2 ND	6.2 Tail and stoplights.
	3 RD	6.3 Indicator and dim deeper mechanism.
	4 TH	7. Accessories & Control 7.1 Electric horn and screen wiper.
10 TH	1 ST	7.2 Fuel gauge oil pressure gauge
	2 ND	water temperature gauge
	3 RD	8. Wiring system 8.1 Types of wiring such as:-Earth returns and insulated return system.
11 TH	4 TH	Earth returns and insulated return system
	1 ST	Wiring diagram of four wheelers
	2 ND	Wiring diagram of four wheelers
	3 RD	Wiring diagram of two wheelers
12 TH	4 TH	8.3 Elective wiring layout in a four-wheeler.
	1 ST	8.3 Elective wiring layout in a four-wheeler.
	2 ND	Inspection of electrical systems
	3 RD	Maintenance of electrical systems
	4 TH	REVISION

RECOMMENDED BOOKS:

1. Electrical equipment of automobiles by Parker Singh.
2. Automobile electrical equipment by Kohil.
3. Basic automobile electricity by C.P.Nakra.
4. Automobile electrical engineering by Aroar & Das.
5. Automobile electrical system and equipments By M.R.Khatawata.
6. Motor manual (modern automobile electrical equipment) by A.W.Judge.
7. Automobile electrical equipments by W.H.Crouse, MC GrawHill.

Subindra Prasad Das.
SIGN OF FACULTY CONCERNED

ACADEMIC COORDINATOR

Payal
SIGN OF HOD

PRINCIPAL