

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/5
Branch	AUTOMOBILE ENGINEERING		Semester	Fifth	
Course Code	502	Course Name	Auto Electricals & Electronics		
Course Outcome 1	Student will be able to explain the theory, construction, working and main components of the starting system for the given vehicle			T-L Hrs	Marks
Learning Outcome 1	Student will be able to explain theory / circuit / construction / working / components of the starting system of given vehicle with help of line diagram			10	10
Contents	Requirements of starting system, basic car starting circuit, , need of starting drive units, bendix, pr-engauged, permanent magnet, folothru and overrunning clutch drives				
Method of Assessment	Theory exam				
Learning Outcome 2	Student will be able to explain the construction, circuit and working of given starting motor			6	10
Contents	Requirements and characteristics of the starting motor, study of starting motor regarding theory, construction, working and major components, types of starting motors				
Method of Assessment	Theory assignment				
Learning Outcome 3	Student will be able to identify major components of the given car starting system			7	10
Contents	Study of major components of the common car starting systems regarding their location, purpose, construction and function				
Method of Assessment	Practical exam				

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 2/5
Branch	AUTOMOBILE ENGINEERING		Semester	Fifth	
Course Code	502	Course Name	Auto Electricals & Electronics		
Course Outcome 2	Student will be able to explain the theory, construction, working and main components of the charging and auxiliary system for the given vehicle			T-L Hrs	Marks
Learning Outcome 1	Student will be able to explain theory / circuit / construction / working components of the charging system of given vehicle with help of line diagram			10	20
Contents	Need and requirements of charging system, basic charging system for the car, alternators and charging circuits, rectification of AC to DC, regulation of output voltage, theory, study of alternator regarding construction, working and components				
Method of Assessment	Theory exam				
Learning Outcome 2	Student will be able to explain theory / circuit / construction / working and components of lighting / auxiliary system			7	10
Contents	Various types of lights in a car, their circuits, , functions of turn, stop, and hazard warning lights types of headlights, circuits and components used in operation of speedometer, horn, wiper system, types of fuel gauges, oil pressure gauges & engine temperature gauges etc.				
Method of Assessment	Theory exam				
Learning Outcome 3	Student will be able to identify major components of given charging system / voltage regulators / auxiliary systems			7	10
Contents	Study of major components of the charging system, voltage regulators and auxiliary systems of common car regarding their location, purpose, construction and function				
Method of Assessment	Practical exam				

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 3/5
Branch	AUTOMOBILE ENGINEERING		Semester	Fifth	
Course Code	502	Course Name	Auto Electricals & Electronics		
Course Outcome 3	Student will be able to explain the theory, construction, working and main components of the ignition system for the given vehicle			T-L Hrs	Marks
Learning Outcome 1	Student will be able to explain theory / circuit / construction / working / components of the ignition system of given vehicle			8	10
Contents	Need and requirements of ignition system, basic ignition circuit for car, construction and working of car ignition system, types of spark plugs, their construction, ignition coil, types of distributors, spark advance, types of spark advances, electronic ignition system, electronic spark control/ spark advance control, distributor-less ignition				
Method of Assessment	Theory exam				
Learning Outcome 2	Student will be able to identify the major components of the ignition system of given vehicle			7	10
Contents	Study of major components of the ignition system of common car regarding their location, purpose, construction and function				
Method of Assessment	Practical exam				

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 4/5
Branch	AUTOMOBILE ENGINEERING		Semester	Fifth	
Course Code	502	Course Name	Auto Electricals & Electronics		
Course Outcome 4	Student will be able to explain the theory, construction, working and components of the battery and wiring system for the given vehicle			T-L Hrs	Marks
Learning Outcome 1	Student will be able to explain theory, construction, working and components of the given automobile battery			8	10
Contents	Principle and construction of lead acid battery, principle and construction of batteries used in electric vehicles, characteristics of good battery, rating, capacity and efficiency of batteries, various tests on batteries, charging methods and equipments				
Method of Assessment	Theory exam				
Learning Outcome 2	Student will be able to perform tests on given battery for determining its condition			6	10
Contents	Fitting and removing the battery, charging of battery, measurement of cell voltage, test for serviceability by means of high rate discharge tester and hydrometer, measuring the battery capacity and comparing the results with its rated output				
Method of Assessment	Practical assignment				
Learning Outcome 3	Student will be able to explain the wiring circuit diagram / wiring system / different components of the wiring system of the given vehicle			7	10
Contents	Wire strips, wiring harness, ribbon cables, specifications, color codes for circuits, circuit numbers printed circuits, relay controls, multi-pin plugs, rubber grommets, terminals, crimp connectors, special or multiple sleeve connectors, strip or cable connectors, fuses				
Method of Assessment	Theory assignment				

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 5/5
Branch	AUTOMOBILE ENGINEERING		Semester	Fifth	
Course Code	502	Course Name	Auto Electricals & Electronics		
Course Outcome 5	Student will be able to explain the theory, circuit, construction and working of the electrical system for the given electric and hybrid vehicle			T-L Hrs	Marks
Learning Outcome 1	Student will be able to explain theory, circuit, construction and working of the electrical system for the given electric / hybrid vehicle			9	10
Contents	Theory, circuit, construction and working of electrical drive system of common electric and electric-hybrid vehicles, major components, characteristics of electric traction motor, chopper control of motor, SRM drives				
Method of Assessment	Theory exam				
Learning Outcome 2	Student will be able to compare electric vehicle and electric hybrid vehicle regarding construction, working, merits and limitations			6	10
Contents	Comparison of electrical systems of electric vehicle and electric hybrid vehicle* regarding construction, working, merits and limitations				
Method of Assessment	Theory assignment				
Learning Outcome 3	Student will be able to identify major components of electrical system for the given electric / hybrid vehicle			7	10
Contents	Study of major components of the electrical systems of electric vehicles and electric hybrid vehicles regarding purpose, location and function				
Method of Assessment	Practical assignment				