

Syllabus Bachelor of “2 Wheeler Technology”

SECTOR :- AUTOMOBILE.

SEMISTER – 1

YEAR - 1

KNOWLEDGE EVALUATION THEORY	PERIODS	PERFORMANCE EVALUATION PRACTICAL	PERIODS
<p style="text-align: center;">(Sem-1) Paper-1- Workshop Technology-1</p> <ol style="list-style-type: none"> 1) Introduction of Workshop environment. 2) Familiarization with Workshop 3) Discipline in Workshop, Workshop Ethics – 4) Workshop Layout Store room, Elec. Supplies 5) 5-S techniques of house keeping 6) Introduction to automobiles Vehicles, Types of Vehicles, engines etc. 7) First Aid General Introduction of Automotive Sector 8) National growth of the Sector. 9) Present status of the man powers requirement in the Sector. <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">(Sem-1) Paper-1- Workshop Technology -1</p> <ol style="list-style-type: none"> 1) Introduction to work culture, discipline and Conduct Safety precautions, Hygines, environmental aspects Etc. 2) Familiarization with Institute and work environment, workshop Layout, working area gangways. 3) Machinery and equipment's, tools materials and supplies 4) Storage, displays and charts, dust and waste bins. 5) Introduction to engines etc. 6) Safety First work with precaution. 7) First Aid precaution. 8) Perform the practical on 5-5 techniques. 9) 5-5 Techniques Elementary first aid. 10) Visit to Automobile Workshop. <p style="text-align: center;">Sem end exam.</p>	70

<p style="text-align: center;">Sem- I</p> <p style="text-align: center;">Paper- II Automotive Engines.</p> <ol style="list-style-type: none"> 1) Description of Internal consumption engines. (I.C Engine) 2) Component & working of I.C. engine. 3) Construction and working of Single cylinder Two stroke Petrol engine. 4) Construction and Working of single cylinder four stroke Petrol engine. 5) Working of single cylinder four stroke Diesel engine. 6) Different between Petrol and diesel engines. 7) Spark Ignition Engines (S.I Engine) 8) Compression Ignition Engines, (C.I.Engine) <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">sem- I</p> <p style="text-align: center;">Paper- II Automotive Engines.</p> <ol style="list-style-type: none"> 1) Demonstration and opening of four stroke petrol engine. 2) Demonstration and opening of four stroke diesel engines 3) Demonstration and opening of Two stroke Petrol engines 4) To see the working of four stroke sMulty cylinder petrol and diesel engines. 5) To see the different between diesel and petrol engine. 6) To see the different between Two stroke and Four Stroke engines. 7) To see the working of Spark Ignition System. 8) To see the working of Compression Ignition System. 9) Visit to Automobile Workshop. <p style="text-align: center;">Sem end exam.</p>	70

<p style="text-align: center;">Sem- I</p> <p style="text-align: center;">Paper- III ENGINE COMPONENTS.</p> <p style="text-align: center;">To detail study of-</p> <ol style="list-style-type: none"> 1) Cylinder Head, 2) Cylinder Block, 3) Piston and piston rings, 4) Connecting Rod, 5) Crank shaft, 6) Cam shaft, 7) Rocker assembly, 8) Carburettor /Fue pump, 9) All types Air filters, 10) Spark plugs, 11) Inlet Exhaust Valves. 12) H.T. Coil 13) Flywheel 14) Exhaust silencer 15) F.I. pump 16) Injector 17) Oil pump. 18) Visit to Automobile Workshop. <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">Sem- I</p> <p style="text-align: center;">Paper- III ENGINE COMPONENTS.</p> <p style="text-align: center;">Remove & Refiting of-</p> <ol style="list-style-type: none"> 1) Cylinder Head, 2) Cylinder Block, 3) Piston and piston rings, 4) Connecting Rod, 5) Crank shaft, 6) Cam shaft, 7) Rocker assembly, 8) Carburettor /Fue pump, 9) Air filter, 10) Spark plugs, 11) Inlet Exhaust Valves. 12) H.T. Coil 13) Fly wheel 14) Exhaust silencer 15) F.I. pump 16) Injector 17) Oil pump 18) . Visit to Automobile Workshop. <p style="text-align: center;">Sem end exam.</p>	36
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<p style="text-align: center;">Sem- I</p> <p style="text-align: center;">Paper- IV</p> <p style="text-align: center;">Information Technology.</p> <p>1) Introduction to Information Technology.</p> <p>2) Basic Fantamantel of I T,</p> <p>3) M.S.Office.- office suite.- Word, Excel, Powerpoint, etc...</p>	16	<p style="text-align: center;">Sem- I</p> <p style="text-align: center;">Paper- IV</p> <p style="text-align: center;">Information Technology.</p> <p>1) Introduction to Information Technology.</p> <p>2) Basic Fantamantel of I T,</p> <p>3) M.S.Office.- office suite.- Word, Excel, Powerpoint, etc...</p>	8
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Syllabus Bachelor of “2Wheeler Technology”

SECTOR : AUTOMOBILES

SEMISTER – 2

YEAR - 1

KNOWLEDGE EVALUATION THEORY	PERIODS	PERFORMANCE EVALUATION PRACTICALS-	PERIODS
<p style="text-align: center;">(Sem-2)</p> <p style="text-align: center;">Paper-1 Workshop Technology-2</p> <p>Chapter.- Toos&Equipments& their working.:-</p> <ol style="list-style-type: none"> 1) Hammers, pliers, chisel, files, spanners, screw drivers etc. 2) HydrolicHoist/Air Compressor 3) Mechanical and hydrolic Jack. 4) Pneumatic grease gun oil spray gun. 5) Mechanical press, hydrolic press <p>Hand and Pedstal grinder, Drill Machine etc.</p> <p style="text-align: center;">Special tools</p> <ol style="list-style-type: none"> a) Torque wrench b) pullers c) piston ring compressor and expanders d) value lifters <p style="text-align: center;">Measuring tools</p> <ol style="list-style-type: none"> a) Vanor caliper b) Micro meter c) Dial Indicator gauge d) Techo meter e) Feeler gauge f)Cylinder bore gauge 	36	<p style="text-align: center;">(Sem-2)</p> <p style="text-align: center;">Paper-1 Workshop Technology-2</p> <p>Chapter.- Toos&Equipments& their working:-</p> <ol style="list-style-type: none"> 1.Hammers, pliers, chisel, files, spanners, screw drivers etc. 2.HydrolicHoist/Air Compressor 3.Mechanical and hydrolic Jack. 4.Pneumatic grease gun oil spray gun. 5.Mechanical press, hydrolic press <p>Hand and Pedstal grinder, Drill Machine etc.</p> <p style="text-align: center;">Special tools</p> <ol style="list-style-type: none"> a) Torque wrench b) pullers c) piston ring compressor and expanders d) value lifters <p style="text-align: center;">Measuring tools</p> <ol style="list-style-type: none"> 1 Vanor caliper 2 Micro meter 3 Dial Indicator gauge 4 Techo meter 5 Feeler gauge 6 Cylinder bore gauge 	70

- g) Vaccume gauge/compression gauge
- h) Hydro meter
- i) Thermo meter
- j) Battery cell tester

Equipment's

- a) Spark plug tester
- b) Timing light gun
- c) Telescopic guage
- d) Boring machine
- e) Honing machine
- f)Connecting rod aligner.

Visit to Automobile Workshop

Sem end exam.

- 7 Vaccume gauge/compression gauge
- 8 Hydro meter
- 9 Thermo meter
- 10 Battery cell tester

Equipment's

- a) Spark plug tester
- b) Timing light gun
- c) Telescopic guage
- d) Boring machine
- e) Honing machine
- f)Connecting rod aligner.

Visit to Automobile Workshop

Sem end exam.

<p style="text-align: center;">(Sem-2)</p> <p style="text-align: center;">Paper – 2</p> <p style="text-align: center;">Power Transmission System.-1</p> <ol style="list-style-type: none"> 1) Basic Study of Clutch system.. 2) Types of Clutch – Single plate, Multy plate, Wet clutch, Dry clutch,etc... 3) Basic Study of Transmission System, (Gear Box) 4) Types of gear box - Constant mesh, Sliding mesh, Synchronizing gear box..etc 5) Belt drives, 6) Rope drives, 7) Chain Drives , 8) Reduction gear box. 9) Types of Reduction gear boxes. <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">(Sem-2)</p> <p style="text-align: center;">Paper – 2</p> <p style="text-align: center;">Power Transmission System.-1</p> <p style="text-align: center;">Remove & Refiting of-</p> <ol style="list-style-type: none"> 1) Single plate Clutch of TVS 50 moped. (Dry type) 2) Oil bath multy Plate clutch of Hero Honda motorcycle, 3) Verious types of Clutch – Single plate, Multy plate, Wet clutch, Dry clutch,etc... 4) Basic Study remove & refit of Gear Box sectional model.. 5) Remove & refit Verious types of gear box - Constant mesh, Sliding mesh, Synchronizing gear box..etc 6) Belt drives, 7) Rope drives, 8) Chain Drives , 9) Reduction gear box. <p style="text-align: center;">Visit to Automobile Workshop</p> <p style="text-align: center;">Sem end exam.</p>	70

<p style="text-align: center;">(Sem- 2) Paper-3</p> <p style="text-align: center;">Engine Cooling System.</p> <ol style="list-style-type: none"> 1) Function and working of cooling system 2) Types of cooling system, 3) Air cooling system.. 4) Liquid (Water) cooling system.. 5) Merits and demerits of air cooling system/liquid cooling system 6) Components of liquid cooling system, 7) Radiator, water pump, pressure cap, fan and fan belts, water jackets, thermo stat valve, hosepipe, coolant, antifreeze solution, cooling sensor. 8) Air cooling Fins & working.. <p style="text-align: center;">Visit to Automobile Workshop Fault finding</p> <p style="text-align: center;">sem end exam.</p>	36	<p style="text-align: center;">(Sem-2) Paper-3</p> <p style="text-align: center;">Engine Cooling System.</p> <p style="text-align: center;">Remove & Refitting of-</p> <ol style="list-style-type: none"> 1) Function and working of cooling system 2) Remove & refit of cooling system, 3) Air cooling system.. 4) Liquid (Water) cooling system.. 5) Merits and demerits of air cooling system/liquid cooling system 6) Components of liquid cooling system, 7) Radiator, water pump, pressure cap, fan and fan belts, water jackets, thermo stat valve, hosepipe, coolant, antifreeze solution, cooling sensor. 8) Air cooling Fins & working.. <p style="text-align: center;">Visit to Automobile Workshop Fault finding</p> <p style="text-align: center;">sem end exam.</p>	70
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Syllabus Bachelor of “2 Wheeler Technology”

SECTOR : AUTOMOBILES

SEMISTER – 3

YEAR - 2

KNOWLEDGE EVALUATION THEORY	PERIO DS	PERFORMANCE EVALUATION PRACTICAL	PERIO DS
<p>(Sem-3) Paper – 1</p> <p>Power Transmission System.-2</p> <p>1) Clutch working of Bajaj pulser, Hero Karisma, Honda Unicorn, etc...</p> <p>2) Centrifugal clutch working of Honda Activa, Hero Plesure, TVS Wego, Scooty Pep etc..</p> <p>3) Variable drive of Honda Activa scooter, Scooty Pep, Hero Plesure, etc..</p> <p>4) Detail study of Sliding mesh Gear box of Yamaha RX 100, Suzuki Max 100, Hero motorcycles, etc..</p> <p>5) Study of shaft drive motorcycles.</p> <p>6) Study of upside down gear shifter of motorcycles.</p> <p>7) Latest trends in gear box & transmission system.</p> <p style="text-align: center;">Sem end exam.</p>	36	<p>(Sem-3) Paper – 1</p> <p>Power Transmission System.-2 Remove & Refiting of-</p> <p>1) Clutch of Bajaj pulser, Hero Karisma, Honda Unicorn, etc...</p> <p>2) Centrifugal clutch of Honda Activa, Hero Plesure, TVS Wego, Scooty Pep etc..</p> <p>3) Variable drive of Honda Activa scooter, Scooty Pep, Hero Plesure, etc..</p> <p>4) Detail study of Sliding mesh Gear box of Yamaha RX 100, Suzuki Max 100, Hero motorcycles, etc..</p> <p>5) Study of shaft drive motorcycles.</p> <p>6) Study of upside down gear shifter of motorcycles.</p> <p>7) Latest trends in gear box & transmission system.</p> <p style="text-align: center;">Sem end exam.</p>	70

<p style="text-align: center;">(Sem-3) Paper - 2</p> <p style="text-align: center;">IGNITION SYSTEM – 1</p> <ol style="list-style-type: none"> 1) Spark Ignition engine.. 2) Compression Ignition engine.. 3) Magneto Ignition system/. starting coil/lighting coil/H.T. coil/CB Point/ Spark plug/C.D.I. Unit. 4) DTSI Ignition system... 5) Battery ignition system. 6) Ele.Power Generator. 7) Difference between S.I. engine and C.I. engine. 8) Faults finding 9) Electronic fuel pump (Petrol) 10) E.C.M. / Sensors 11) Fault finding <p style="text-align: center;">Visit to Automobile Workshop</p> <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">(Sem-3) Paper - 2</p> <p style="text-align: center;">IGNITION SYSTEM - 1 Remove & Refitting of-</p> <ol style="list-style-type: none"> 1) To see how to generate electric current. 2) To see how to generate the high voltage ..(Spark) 3) To see the how to work magneto ignition system. 4) To see the how to work Battery Ignition system. 5) Open and check the magneto wheel, lighting coil starting coil, Charging coil,/CB Point/Condenser/ C.D.I. Unit of two wheeler. 6) To open the full Ignition circuit and check 7) Fault finding. <p style="text-align: center;">Visit to Automobile Workshop.</p> <p style="text-align: center;">3rd sem exam.</p>	70

<p style="text-align: center;">(Sem-3) Paper - 3</p> <p style="text-align: center;">ENGINE LUBRICATION SYSTEM.</p> <ol style="list-style-type: none"> 1) Objectives of lubrication system. 2) Types of lubricants like solid, semi solid, liquid 3) Multy grade oil according to viscosity 4) Types of lubricating system – gravity feed system, flash lubricating system, pressure lubrication system 5) Parts of pressure lubricating system – oil pressure guage, oil filter, oil pump, oil seal, oild strainer, dipstick. 6) Fault finding 7) Industrial visit to automobiles work shop <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">(Sem-3) Paper - 3</p> <p style="text-align: center;">ENGINE LUBRICATION SYSTEM.</p> <p style="text-align: center;">Remove & Refiting of-</p> <ol style="list-style-type: none"> 1) lubrication system of TVS Victor and Honda Unicorn motorcycle. 2) To see the types of lubricants like solid, semi solid, liquid 3) To use the Multy grade oil according to viscosity 4) Types of lubricating system – gravity feed system, flash lubricating system, pressure lubrication system 5) To see the Parts of pressure lubricating system – oil pressure guage, oil filter, oil pump, oil seal, oild strainer, dipstick. 6) Fault finding 7) Industrial visit to automobiles work shop <p style="text-align: center;">Sem end exam.</p>	70
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Syllabus Bachelor of “2 Wheeler Technology”

SECTOR : AUTOMOBILES

SEMISTER – 4

YEAR - 2

KNOWLEDGE EVALUATION THEORY	PERIODS	PERFORMANCE EVALUATION PRACTICAL	PERIODS
<p>(Sem-4) Paper-1</p> <p>Automotive Electricals and Electronics.</p> <ol style="list-style-type: none"> 1) Study of Basic Principle of Electrical and Electronics. 2) Simple electrical circuit and parallel circuit.. 3) Indicators & Flashers ,Buzzers, Hazard light, Head light, Tail lamp, Parking Lamps, Stop Lights, Meter Lamps, etc, 4) Ignition switch, Head light switch, stop light switch, Side indicator switch, etc 5) Study of Electric Vehicles, DC motors, BLDC motors.. 6) AC and DC generator.- construction and working.. 7) Study of all types battery.. <p>Sem end exam.</p>	<p>36</p>	<p>(Sem-4) Paper-1</p> <p>Automotive Electricals and Electronics.</p> <p>Remove & Refitting of-</p> <ol style="list-style-type: none"> 1) Basic Principle of Electrical and Electronics. 2) Simple electrical circuit and parallel circuit.. 3) Indicators & Flashers ,Buzzers, Hazard light, Head light, Tail lamp, Parking Lamps, Stop Lights, Meter Lamps, etc, 4) Ignition switch, Head light switch, stop light switch, Side indicator switch, etc... 5) Electric Vehicles, DC motors, BLDC motors.. 6) AC and DC generator.- construction and working.. 7) Study of all types of battery.. <p>Sem end exam.</p>	<p>70</p>

<p style="text-align: center;">(Sem-4) Paper-2</p> <p style="text-align: center;">Steering, Brake and Suspension System.</p> <ol style="list-style-type: none"> 1) Types Of Mechanical steering. 2) Front Fork of motorcycles.. 3) Front Fork of Scooters.. 4) Front Telescoping suspension of motorcycles. 5) Types of brakes. Mechanical, Hydraulic, ABS Brakes.. 6) Electronics Stability control. 7) Types of Suspensions ,Floting , Full axle , Independent Nitrogen gas field system.etc. 8) Types of suspension springs. <p style="text-align: center;">Sem end exam.</p>	36	<p style="text-align: center;">(Sem-4) Paper-2</p> <p style="text-align: center;">Steering, Brake and Suspension System.</p> <p style="text-align: center;">Remove & Refiting of-</p> <ol style="list-style-type: none"> 1) Mechanical steering of Basic old motorcycle. 2) Front Fork of motorcycles.. 3) Front Fork of Scooters.. 4) Front Telescoping suspension of motorcycles. 5) Drum Brakes, Disk brakes, Mechanical, Hydraulic, ABS Brakes.. 6) Electronics Stability control. 7) Types of Suspensions ,Floting , Full axle , Independent Nitrogen gas field system.etc. 8) Types of suspension springs. <p style="text-align: center;">Sem end exam.</p>	70
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<p style="text-align: center;">(Sem-4) Paper- 3</p> <p style="text-align: center;">Automotive body and Paint Technology.</p> <ol style="list-style-type: none"> 1) Introduction of engineering drawing. 2) Free hand sketches of Automobile parts. 3) Study of Sheet metal working.- use of different type of tools, 4) Study of Different type operations in sheet metal working, Marking , measuring , bending , simple joints, 5) Study of Electric welding , Gas welding, Brazing , Spot welding , 6) Study of Denting and surface finishing – Procedure of denting , Stripping of old paint , 7) Study of Painting – General Idea of ISI specification & Varnish, types of paint, Lacquer coat, Rubbing & polishing ,etc.. 	36	<p style="text-align: center;">(Sem-4) Paper- 3</p> <p style="text-align: center;">Automotive body and Paint Technology. Practice of --</p> <ol style="list-style-type: none"> 1) Engineering drawing. 2) Free hand sketches of Automobile parts. 3) Sheet metal working.- use of different type of tools, 4) Different type operations in sheet metal working, Marking , measuring , bending , simple joints, 5) Electric welding , Gas welding, Brazing , Spot welding , 6) Denting and surface finishing – Procedure of denting , Stripping of old paint , <p style="text-align: center;">Study of Painting – General Idea of ISI specification & Varnish, types of paint, Lacquer coat, Rubbing & polishing ,etc..</p>	70
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