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Revised:1 year 2009

Syllabus For

Two Wheeler Repairer (Auto) Trade

Under G.C.V.T. Pattern



Directorate of Employment & Training

(An ISO-9000:2000 Certified Organization)

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Web : www.talimrojgar.org



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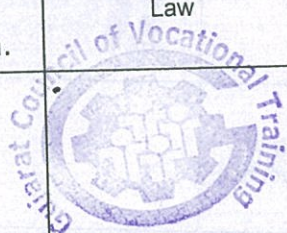
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GCVT - Engineering Group

Syllabus of Two Wheeler Repairer Trade


We ek No.	Practical	Theory	Maths	Science		Soft Skill
				Physics	Chemistry	
1	Introduction to the trade, Safety precautions and first aid treatment, fire and fire fighting equipments.	General introduction to course duration and the course contents, rules and regulations of the institute.	Impotance of Maths in trade calculation, Conversion from Decimal to Fraction & vice versa. Apply the theory of BODMAS for fractional and decimal numbers.	Units and measurement - Brirish, Metric, S.I. Units, conversion & examples	Basic Structure of Atom & their terminology, Describe Metalic & Non Metalic elements	1.11, 1.12, 2.01, 3.01, 6.01, 7.01, 8.02, 11.01
2	Brief history of an Automobile industries and advancement in the field.	Theory on types of automotive vehicles.	The Square Root - Thae square & square root of a whole number & decimal.	Newton's Laws of Motion - Force Work, Power, Energy Speed Velocity, Acceleration, Mass & Weight with Calculation	Properties of Ferrous & Non Ferrous Metals & their alloys,	1.13, 1.21, 2.02, 3.01, 5.01, 6.02, 8.01, 11.02
3	Details and construction of Automobile hand tools and equipments	Users and maintenance of hand tools.	Examples regarding Ratio, Proportion, average & percentage	Pressure - Explain Types & laws(Pascal law, Boyle's Law, Charles law),	Manufacturing Process of Pig Iron by Blast Furnace & cast Iron by Cupola Furnace. Descibe types of Cast Iron	1.14, 1.22, 2.02, 3.01, 6.03, 8.02, 8.03, 9.01, 11.03
4	Details and construction of Automobile hand tools and equipments	Users and maintenance of hand tools.	Geomaterly - Properties of Line, Angle, Triangle, Circle & it's examples. Pythagoras theorm & examples	Density & Specific Density, Principle of Archemedies & calculation, Hydro Meter & Lacto Meter	Steel - Structure, Types, & Manufacturing Process	1.23, 2.02, 3.02, 4.01, 6.04, 8.03, 11.04
5	Introduction to the accessories of two wheeler auto vehicle.	Requirements and uses of different accessories.	Logarithms - Arithmetical calculation using <u>LOG</u> Tables	Heat & Temprature - Units & Measurement, Melting Point, Boiling Point & transmission of heat.	Describe Non Ferrous Metal- Copper, Lead, Zinc, Aluminium, Tin & their alloys	1.15, 1.24, 2.03, 3.02, 5.02, 6.04, 8.02, 8.07, 11.05
6	Type of two wheelers.	Classification of two wheelers.	Fundamental of Algebra - Formula & Equation, Power & Indices	Physical & Mechanical Properties of Material & Heat treatment Process	Corrosion : Oxidation & reduction, Prevention & Anti Corrosive Material	1.25, 2.03, 6.04, 8.02, 8.07, 10.01, 11.06
7	System in the two wheelers, ignition, carburetion etc.	Theory on the various systems.	Study of Area & Examples of Area for Triangle, square, circle, rectangle, Sphere, Hexagon and Sector	Laws of Friction, Types of Friction, Coefficient of Friction, Lubrication	Describe Construction & application of Cell & Battery, Electroplating Process	1.16, 1.26, 2.04, 6.05, 8.02, 8.11, 8.12, 8.13, 10.02, 11.07
8	System in the two wheelers, ignition, carburetion etc.	Theory on the various systems.	Study of Volume Examples of Volume for a Cylinder, Cube, Cone, Pyramid, Prism.	Terminology of Basic electricity & Ohm's Law	Laws of Faraday for electrolysis and it's application	2.05, 6.05, 8.02, 8.04, 8.08, 10.03, 11.07
9						1.17, 1.27, 2.01, 3.01, 6.01, 7.02, 8.05, 10.01



GCVT - Engineering Group Syllabus of Two Wheeler Repairer Trade

We ek No.	Practical	Theory	Engineering Drawing	W/Cal & Science	Soft Skill
10	Introduction to frame, major assemblies, sub-assemblies and their functions.	Introduction and function of various main parts of two wheelers.	Introduction & Importance about Engg. Drawing	System of Units - British Metric & S.I. Units for length, Mass, Area, Volume, Capacity, Time.	1.17, 4.01, 5.03, 6.01, 8.05, 9.01, 11.01
11	Chassis, Different types and constructional details and maintenance.	Introductory theory on chassis	Identification, Use & Application of Drawing Instruments - T Square, Drawing Board etc.	Conversion between British & Metric Systems.	1.18, 1.27, 2.02, 3.01, 6.02, 7.02, 8.06, 10.03
12	Repairing and alignment of chassis.	Construction and function of chassis.	Letters, Numbers & Alphabats as per ISI Standard	The Square Roots - The square and squaree root of a whole number and decimal regarding shop problems	1.18, 4.02, 5.03, 6.02, 8.06, 9.02, 11.02
13	Repairing and alignment of chassis.	Construction and function of chassis.	Free Hnad Sketching of Staraight Line, Rectangles, Circles, Polygons, Etc.	Examples of square root & cube root using Log tables	1.19, 1.27, 2.04, 3.02, 6.03, 7.03, 8.02, 10.03
14	General faults, Diagnosis and Remedial measures for two and four stroke engines.	Theory of two and four stork engine, Merits and demerits.	Use of Different Types of Line & symbols for Drawing . Importance of Putting Dimensions on Drawing as per ISI	Physical & Mechanical properties of Metals Related to trade	4.02, 5.04, 6.03, 8.09, 9.02, 11.03
15	General faults, Diagnosis and Remedial measures for two and four stroke engines.	Theory of two and four stork engine, Merits and demerits.	Free hand sketching with dimension, Scale & Propotionate Sketching	Properties, Uses and description of trade related ferrous metals and their alloys	1.27, 1.31, 2.05, 3.02, 6.04, 7.03, 8.09, 10.03
16	Repair and maintenance of two stroke engine.	Precautionary measures while repairing of engine.	Reading of simple blue print regarding welding	Properties, Uses and description of trade related non ferrous metals and their alloys	1.32, 4.03, 5.04, 6.04, 8.1, 9.02, 11.04
17	Removing of cylinder head, Piston connecting rod, Cleaning de-carbonizing and head checking, Piston and ring clearance setting.		Free hand Sketch of Electric Arc welding equipements	Heat & Tempreture - Effects of Heat, Thermo metrics Scale such as Celsius, Ferren Heat & Kelvin. Temperature measuring instrumentsw.	1.27, 1.33, 2.06, 3.01, 6.05, 7.04, 8.1, 10.04
18	Repair and maintenance of four stroke engines.	Overhauling of engines, performance and specific fuel consumption.	Free hand scketch of Gas welding equipements	Conversion between above scales of temprature.	1.34, 4.03, 5.05, 6.05, 9.03, 11.05
19	Removing of cylinder head, Piston connecting rod, Cleaning de-carbonizing and head checking, Piston and ring clearance setting, valve cleaning, checking and reconditioning.		Welding & Welding Joits Symbols as per ISI	Units of Heat - Calorie, B.Th.U, CHU, Specific Heat, Latent Heat, Heat Loss & Heat gain - Simple Problems	1.28, 1.35, 2.07, 3.01, 6.06, 7.04, 8.11, 10.04
20	Silencers, Repairing maintenance.	Silencers in general.	Free hand sketch of Job holding methods with jig & fixture	Workshop related problems on percentage and Average	1.36, 4.04, 5.05, 6.06, 8.12, 9.03, 11.05
21	Diagnosing noises and faults in engine and rectification.		Geometrical Construction of Bisect Line, Angles, Equal Parts of Line, Cylinder, Cube, Prism, Pyramid, & Cone etc.	Workshop related Problems on Ratio, & Proportion	1.28, 1.37, 2.01, 3.02, 6.01, 7.05, 8.13, 10.04
22	Performance test, use of dynamometer test benches.		Isometric Views & Oblique views with Dimensions of such as cube, Rectangular Block, Cylinder etc.	Difference Between Mass and Weight - Definition of Speed, Velocity & Acceleration	1.31, 4.04, 5.06, 6.01, 9.03, 11.05

GCVT - Engineering Group Syllabus of Two Wheeler Repairer Trade

Week No.	Practical	Theory	Engineering Drawing	W/Cal & Science	Soft Skill
23	Electrical system, Lighting and ignition.	Lighting and ignition system.	Explanation of simple orthographic projection 1st angle method as per IS	Work & Power - Units & Simple Problems regarding IHP, BHP & Efficiency	1.28 , 1.32 , 2.02 , 3.02 , 6.02 , 7.05 , 8.14 , 10.04
24	Electrical system, Lighting and ignition.	Lighting and ignition system.	Explanation of simple orthographic projection 3rd angle method as per IS	Energy - Law of Conservation of Energy, Potential Energy, Kinetic Energy units & workshop problems	1.33 , 4.05 , 5.06 , 6.02 , 8.03 , 9.04 , 11.05
25	Electronic ignition repair and maintenance.		Sketching the views solid body when viewed perpendicular to their surfaces & axes.	Algebra - Factorisation and expansions, Basic Equations and Problems	1.28 , 1.34 , 3.01 , 6.03 , 8.03 , 10.04
26	General faults, Diagnosis and Remedial measures for lighting system.		Week nO. 16 Continue	Algebra - Simple equations problems, Quadratic equations & perfect polynomials equations problems	1.35 , 4.05 , 5.03 , 6.03 , 8.03 , 9.04 , 11.06
27	General faults, Diagnosis and Remedial measures for ignition system.		Orthographic projection of simple objects like Square Bar, Hexagonal bar, Circular Bar, Hollow Bar, Tapered Bar etc.	Simple Machine - Lever, Types description with their examples,	1.29 , 2.04 , 3.01 , 6.04 , 7.05 , 8.02 , 8.07 , 10.05
28	Suspension system, Repair and maintenance.	Suspension system, their classification and requirements.	Week nO. 18 Continue	Simple problems on straight and bell cranked levers	1.36 , 4.02 , 5.04 , 6.04 , 8.07 , 9.04 , 11.06
29	Front and rear suspension, axles, steering, bearing and thrust bearing assemblies repair and maintenance.		Construction of Orthographic Projection from the given Isometric view of Shaped Blocks in 1st Angle Method.	Stress & Strain - Modules of Elasticity definition, Hooke's law and their terms	1.29 , 2.05 , 3.02 , 6.05 , 7.05 , 8.02 , 8.12 , 10.05
30	Trouble shooting in suspension, steering and bearing.		Week nO. 20 Continue	Stess and Strain workshop related simple problems	1.37 , 3.02 , 4.03 , 6.05 , 8.14 , 9.05 , 11.06 , 11.06
31	Brake, General faults, diagnosis and remedial measures, Braking efficiency and testing.	Braking system, their type and users.	Construction of Orthographic Projection from the given Isometric view of Shaped Blocks in 3rd Angle Method.	Mensuration - Areas of Square, Rectangle, Equilateral trinagle, Isoscales Triangles, Right Angle Triangles and their workshop related problems.	1.29 , 2.06 , 3.01 , 6.05 , 7.06 , 8.02 , 8.03 , 10.05
32	Brake, General faults, diagnosis and remedial measures, Braking efficiency and testing.	Braking system, their type and users.	Week nO. 22 Continue	Mensuration - Areas of Hexagone, Circle, Circular Ring, Semi Circle, Sector Ellipse and their workshop related problems	1.31 , 2.07 , 3.01 , 6.06 , 8.03 , 9.05
33	Carburetion, General faults, diagnosis and remedial measures.	General theory on carburetion.	Simple Isometric Drawing From given orthographic views of simple objects & sectionalm Isometric Views	Mensuration - Areas of different Geometrical Shapes according to fabrication works	1.32 , 2.01 , 3.02 , 6.06 , 7.06 , 8.02 , 8.03 , 10.05
34	Tuning and setting of carburetor.		Welding Symbols as per ISI employed on Drawings	Mensuration - Volume and weight of simple solid bodies such as cube, solid Rectangular Block, Square Prism, Rectangular Prism, Hexagonal Prism, Triangular Prism and their workshop related problems	1.31 , 2.02 , 3.02 , 6.06 , 8.07 , 9.05 , 11.07

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Week No.	Practical	Theory	Engineering Drawing	W/Cal & Science	Soft Skill
35	Wheels and tyres, their general faults, diagnosis and remedial measures.	Theory on wheels and tyres.	Drawing of Square Headed and Hexagonal Headed bolt & Nut with Dimension as per IS Standard	Mensuration - Volume and weight of solid cylinder, Hollow Cylinder, Cone - shop problems	1.32 , 2.04 , 3.01 , 6.06 , 7.06 , 8.05 , 8.07 , 10.05
36	Repair maintenance of clutch and clutch settings.	Clutch in general.	Drawing of Rivetts with Given Dimensions as per IS Standard	Finding the Capacity in litres of square, rectangular, Hexagone, Cone and cylinder shaped vessels	1.31 , 2.05 , 3.01 , 6.06 , 8.07 , 9.06 , 11.07
37	Oil Pump repair and maintenance.		Drawing of Riveted Joints with given dimension as per IS Standard	Finding the the lateral surface area and total surface area of square, rectangle, hexagone, cone, and cylinder shaped solids and vessels	1.32 , 2.06 , 3.02 , 6.06 , 7.06 , 8.05 , 8.09 , 10.06
38	Transmission system, General faults, diagnosis and remedial measures for different models of two wheelers.	Type of drives.	Drawing of Keys as per IS standard. Key & Cotter Joints	Further practice of Mensuration problems by using logarithms	1.31 , 2.07 , 3.02 , 8.09 , 9.06 , 11.07
39	Repair and maintenance of transmission system.		Drawing of Washers with given dimension as per IS Standard	Graph - Simple Equation	1.32 , 2.01 , 3.01 , 7.07 , 8.05 , 8.1 , 10.06
40	Gear box, General faults, diagnosis and repairing, Testing and general setting.	Introduction to preventive maintenance of gear box.	Drawing of Screw threads with given dimension as per IS Standard	Over all estimation & costing for job to be done by fabrication work	1.33 , 2.02 , 3.01 , 8.1 , 9.06 , 11.07
41	Gear box, General faults, diagnosis and repairing, Testing and general setting.	Introduction to preventive maintenance of gear box.	Free Hand Sketches of Hand Tools of the Trade	Over all estimation & costing for job to be done by fabrication work	1.33 , 2.04 , 3.02 , 7.07 , 8.06 , 8.14 , 10.06 , 12
42	Fuel and air supply system, maintenance repair and general faults.	Theory of fuel/air system.	Exercise on Blue Print. Reading related to missing Dimensions & missing sections, Fabrication Job & Surface Roughness Symbols Conventional symbol of Materials as per IS Standard		1.34 , 2.05 , 3.02 , 7.07 , 8.06 , 10.06 , 12
43	General servicing and Road testing, typical service station equipments for routine servicing.	Preventive maintenance of vehicle.			1.34 , 2.06 , 3.01 , 7.07 , 8.07 , 10.06 , 12
44	Revision & TEST	Revision & TEST	Revision & TEST	Revision & TEST	3.02 , 7.07 , 8.12 , 10.06 , 12

Note : The training for Soft Skill during week no. 10 to 43 should be held in extra curriculum Shop floor training must be scheduled during week no. 45 to 52 as Industrial Attachmnet.

