

PROPOSED
First Year Curriculum Structure for
B.Voc. Degree Programme in
Automobile Servicing

([Dr Babasaheb Ambedkar Technological University, Lonere](#))

Semester-I

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credits	Total Marks
			L	T	P	ISE	MSE	ESE		
General Education										
Semester I - Theory										
1	BVASC101	Motor Vehicle Technology -II	3	0	-	25	0	25	3	50
2	BVASC102	Automobile Electrical Equipment	3	0	-	25	0	25	3	50
3	BVASC103	Two and Three Wheeler	3	0	-	25	0	25	3	50
4	BVASC104	Modern Electric & Hybrid Vehicles	0	0	-	25	0	25	3	50
		Total							12	200
Skill Components										
Lab/Practical's										
5	BVASL105	Metrology and Measuring Instruments –Lab	0	0	2	25	0	25	1.5	50
6	BVASL106	Electric & Hybrid Vehicles –Lab	0	0	2	25	0	25	1.5	50
On-Job-Training (OJT)/Qualification Packs (ANY 1)									Group GAS1	
			Evaluation Scheme							
						IA			ESE	
7	BVASE107	Elective: Automotive Service Technician Level 5 (ASC/Q 1403)								
8	BVASE108	Spare Parts Operations Executive Level 5 (ASC/Q 1502)								
9	BVASE109	Industrial Engineer (Layout Design) (ASC/Q6401)								
10	BVASE110	Tool Designer (ASC/Q4001)								
11	BVASE111	Equipment Designer L5 (ASC/Q 6405)								
		Total				50		150	15	200
		Total							18	300

Semester-II

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credits	Total Marks	
			L	T	P	ISE	MSE	ESE			
Semester II- Theory											
1	BVASC201	Industrial Management	3	0	-	25	0	25	3	50	
2	BVASC202	Total Quality Management	3	0	-	25	0	25	3	50	
3	BVASC203	Entrepreneurship	3	0	-	25	0	25	3	50	
4	BVASC204	Garage Organization & Transport Management	3	0	-	25	0	25	3	50	
		Total							12	200	
Skill Components											
Lab/Practical's											
5	BVASL205	Project	0	0	3	25	0	25	3	100	
On-Job-Training (OJT)/Qualification Packs (ANY 1)									Group GEM2		
			Evaluation Sheet								
			IA			ESE					
6	BVASE212	Elective: One more QP to be opted from the QPs mentioned in the Level 5 first semester				50				15	200
		Total							18	300	

**Semester
I
Syllabus**

Syllabus

Name of the Course: B. Voc (Automobile Servicing)

Semester I

Subject Name: Motor Vehicle Technology - II		
Course Code : BVASC101	Semester: I	
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 , IA: 25 , Total: 50	
TH Exam Duration: 01 Hours	Scheme of Marking PR: --	
Credit: 3		
Content		Hours
Unit – I	1.0. FRAME AND BODY	09
	Function and construction of frame. Cross-section of frames. Unitized construction (monocoque) types of bodies. Terms - Turning radius, lock-to-lock angle, center point steering, positive steering, and grade ability. Idea of Safety features in a modern car.	
Unit – II	2.0. SUSPENSION SYSTEM	09
	Function. Types - conventional and independent. Spring types - coil, leaf - elliptical, semielliptical; helper springs, transverse springs. Spring camber; spring material. Torsion bar, stabilizer bar. Shock absorbers- telescopic and gas. Maruti suspension system and shockers. Anti-roll bars. Nitrox suspension.	
Unit – III	3.0. STEERING SYSTEM AND FRONT AXLE	09
	Principle - Ackermann and Davis. Function, requirements. Steering gear box - types. Construction and working details of worm and sector, rack and pinion, worm and wheel, worm and recirculating ball type. Tractor steering. Power steering. Electronic Steering. Front axle - rigid front axle. Stub axle. Elliot and reverse Elliot type. Lemoine and reverse lemoine type. Tractor front axle. Maruti steering system. Wheel alignment - castor angle, camber angle, K.P.I., Toe-in, toe out. General values of these.	
Unit – IV	4.0. BRAKING SYSTEM	09
	Braking terms - braking efficiency, stopping distance, stopping time, weight transfer during braking, leading/trailing shoe of brake. Determination of braking torque. Effect of braking on steering. Types of braking systems- constructional details and working of mechanical brakes, hydraulic brakes, parking brake, vacuum, pneumatic, air-hydraulic brakes; tractor brakes. Drum and disc brakes. Master cylinder, tandem master cylinder, wheel cylinder. Brake lining and brake fluid. Brake defects, their causes and remedies. Anti-Lock Braking System (ABS) & Electronic Brake Distribution (EBD).	
Unit – IV	5.0 AUTOMOBILE POLLUTION AND ITS CONTROL	09
	Effects and extent of pollution caused due to stationary and automobile engines. Harmful products and their causes in petrol & diesel engines. Measures to control exhaust emissions from two-stroke engines, four-stroke engines, and diesel engines. Turbocharger. Products which cause de-activation of catalysts in catalytic converters. Unleaded petrol. Emission measuring instruments for petrol and diesel engines. Limits specified in Motor Vehicles Act. Recent trends in Automobile Pollution Control- Exhaust Gas Recirculation. Air Injection, Reactor System. Positive Crankcase Ventilation. Evaporative Emission Control System.	
Books		
Name of Authors	Title of the Book	Publisher
A.K. Babu, S.C. Sharma, T.R. Banga	Automobile Mechanics	Khanna Publishing House

Subject Name: Automobile Electrical Equipment	
Course Code : (BVASC102)	Semester: I
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25, IA: 25, Total: 50
TH Exam Duration: 01 Hours	Scheme of Marking PR: --
Credit:3	

Content		Hours
Unit – I	1.0. Automobile Wiring Systems & Cables	09
	Earth-return and insulated-return systems; 6 Volt, 12 Volt and 24 Volt systems. Positive and negative earthing. Cables-starting systems cables, general purpose cables and high-tension cables; specifications and color codes. Diagram of a typical wiring system. Wiring harness, cable connectors, circuit breakers, plastic fiber-optic wires, printed circuits. Fuses in circuits.	
Unit – II	2.0. Storage Battery	09
	Principle of lead-acid cells; constructional details of battery plates, separator, container, terminal, vent plug, grouping compound. Electrolyte: specific gravity of electrolyte and its variation with temperature. Effect of charging and discharging of specific gravity. Capacity of battery. Efficiency of battery. Methods of charging of battery. Internal circuit of battery charger. Care and maintenance of batteries. Checking for cell voltage and specific gravity of electrolyte. Battery tests- high discharge test, cranking motor test, open-circuit voltage test, cadmium test, life test. Battery failures, Maintenance-free batteries, VRLA batteries, Traction battery. Alkaline type batteries. Fuel cell and its types, Battery Life enhancer.	
Unit – III	3.0. Dynamo	09
	Principle of generation of D.C. Constructional details of a Dynamo. Armature reaction. Principle of commutation. Construction of commutator. Types of wound field generator series, shunt and compound wound. Other types of D.C. generators-four brush & four pole, interpole, split field and bucking field. Dyna-Starter, Generator drive.	
Unit – IV	4.0. Alternator	09
	Principle of generation of A.C. Constructional details of an alternator. Working of alternators. Advantages over dynamo. Types of alternators. Charging of battery with an alternator. Regulator for alternators.	
Unit – V	5.0. Regulators	09
	Constant current and constant voltage systems, Double-contact and compensated voltage control regulators. Current-and-voltage regulator, Cut-out	

Books		
Name of Authors	Title of the Book	Publisher
A.K. Babu	Automotive Electricals and Electronics	Khanna Publishing House
PL Kohli	Automotive Electrical Equipment	...
A.W. Judge	Modern Electrical Equipment	...
WH Crouse	. Automotive Electrical Equipment	...

Subject Name: Two and Three Wheeler	
Course Code : (BVASC103)	Semester: I
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 40, IA: 10, Total: 50
TH Exam Duration: 02 Hours	Scheme of Marking PR: --
Credit:3	

Content		Hours
Unit – I	1.0. The Power Unit	09
	Two stroke and four stroke SI & CI engine Construction and Working, merits and demerits, Symmetrical and unsymmetrical valve & port timing diagrams, scavenging process	
Unit – II	2.0. Fuel and Ignition Systems	09
	Fuel system – Different circuits in two wheeler fuel systems, fuel injection system. Lubrication system, Ignition systems - Magneto coil and battery coil spark ignition system, Electronic ignition System, Starting system - Kick starter system – Self-starter system, recent technologies.	
Unit – III	3.0. Chassis and Sub-Systems	09
	Main frame for two and three wheelers, its types, Chassis and different drive systems for two wheelers, Single, multiple plates and centrifugal clutches, Gear box and its and various gear controls in two wheelers. Front and rear suspension systems, Shock absorbers, Panel meters and controls on handle bar, Freewheeling devices.	
Unit – IV	4.0. Brakes and Wheels	09
	Drum brakes & Disc brakes Construction and Working and its Types, Front and Rear brake links layouts. Brake actuation mechanism. Spoked wheel, cast wheel, Disc wheel & its merits and demerits. Tyres and tubes Construction & its Types. Steering geometry	
Unit – V	5.0. Two & Three Wheelers – Case Study	09
	Case study of Sports bike, Motorcycles, Scooters and Mopeds - Autorickshaws, Pick up van, Delivery van and Trailer, Servicing and maintenance, recent developments.	

Books		
Name of Authors	Title of the Book	Publisher
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Subject Name: Modern Electric and Hybrid Vehicles

Course Code : (BVASC104)	Semester: I
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 , IA: 25 , Total: 50
TH Exam Duration: 01 Hours	Scheme of Marking PR: --
Credit: 3	

Content		Hours
Unit – I	1.0. Introduction	07
	Introduction to electric and hybrid electric vehicles, History of hybrid and electric vehicles, Social and environmental importance of electric and hybrid electric vehicles, Electrical basics, Motor and generator basics.	
Unit – II	2.0. Electric and Hybrid Electric Drive Trains	07
	Basic concept of electric and hybrid traction, Introduction to various electric and hybrid electric drive train topologies, Advantages and disadvantages.	
Unit – III	3.0. Power Flow	07
	Power flow control in electric and hybrid electric drive train topologies.	
Unit – IV	4.0. Electric Drive Components	07
	Introduction to electric drive components used in electric and hybrid vehicles, Electric motor requirements, Direct Current (DC) motors (Brushed and Brushless), Power converters, Drive controllers.	
Unit – V	5.0. Regenerative Braking System (RBS)	08
	Introduction and need of Regenerative Braking System, Advantages and disadvantages of RBS, Working of RBS, Concept of Regenerative Braking using Piezoelectric material, Using shock absorbers as vibration energy harvesters	

Books		
Name of Authors	Title of the Book	Publisher
A.K. Babu,	Electric & Hybrid Vehicles	Khanna Publishing House
Jack Erjavec & Jeff Arias	Automotive Fuel Technology-Electric, Hybrid and Fuel-Cell Vehicles	---
Iqbal Husain	Electric and Hybrid Vehicles: Design Fundamentals	---
Mehrdadehsani, Yimingao, Ali Emadi.	Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory and Design:	---

Subject Name: Metrology and Measuring Instruments lab.

Course Code : BVASL105	Semester: I
Weekly Practical's: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration: --	Scheme of Marking PR: 25 , IA: 25 , Total: 50
Credit: 1.5	

Content

1. Measurement of angle with the help of sine bar/ Vernier Bevel protractor.
2. Study and sketch of various types of optical projectors.
3. Study and sketch of various types of comparators and use them for comparing length of given piece.
4. To measure the diameter of a hole with the help of precision balls.
5. To measure the diameter of a hole with the help of precision balls.
6. To measure external and internal taper with the help of taper gauges, precision rollers.
7. To test the squareness of a component with auto-collimeter.
8. To measure the pitch, angle and form of thread of a screw.
9. To measure the geometry of a gear having involute profile.
10. To measure the straightness of the edge of a component with the help of autocollimeter.
11. To measure the length, breadth, thickness, depth, height with micrometer.
12. to measure the length, breadth, thickness, depth, height, with height gauge and Vernier calipers.
13. Calibration of Vernier calipers/micrometers.
14. Calibration of height gauge/depth gauge.
15. Study of a tool maker's microscope.
16. Checking of accuracy of snap gauge with slop gauge.
17. Checking of accuracy of a plug gauge with micrometer.
18. Measurement of areas by polar planimeter.
19. Use of feeler, wire, radius and fillet gauges measurement of standard parameters.

Subject Name: Electric and Hybrid Vehicles Lab

Course Code : BVASL106	Semester: I
Weekly Practical's: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration: --	Scheme of Marking PR: 25 , IA: 25 , Total: 50
Credit: 1.5	

Content

1. Understand working of different configurations of electric vehicles
2. Understand hybrid vehicle configuration and its components, performance analysis
3. Understand the properties of batteries and its types
4. Understand of electric vehicle drive systems.
5. Understand of hybrid electric vehicles.
6. Understand Auxiliary systems including charging, starter motor, on board power supply, lighting and environmental sensing and conducting repairs. Repair & Replacement of Electric/ Hybrid Vehicle body
7. Repair & Replacement of Electric Vehicle Drive Train
8. Fault diagnosis & repair / replacement of Battery, DC & AC Electrical Machines, and Hybrid Electric Vehicles

Group GAS1 of Qualifier Packs

Subject Name: Automotive Service Technician Level 5 (ASC/Q 1403)	
Course Code : BVASE107	Semester: I
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/qualification-title?nid=1026	

Subject Name: Spare Parts Operations Executive Level 5 (ASC/Q 1502)	
Course Code : BVASE108	Semester: I
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/qualification-title?nid=1246	

Subject Name: Industrial Engineer (Layout Design) (ASC/Q6401)	
Course Code : BVASE109	Semester: I
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/sites/default/files/MASTER%20OCCUPATIONAL%20MAP%20-%209_0.pdf	

Subject Name: Tool Designer (ASC/Q4001)	
Course Code : BVASE110	Semester: I
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/sites/default/files/QP-Tool%20designer.pdf	

Subject Name: Equipment Designer L5 (ASC/Q 6405)	
Course Code : BVASE111	Semester: I
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/sites/default/files/QP-Equipment%20Designer.pdf	

***Skill Practical assessment will be done rules/ procedure of respective Skill Sector Council of India.**

**Semester
II
Syllabus**

Syllabus
Name of the Course: B. Voc (Automobile Servicing)
Semester II

Subject Name: Industrial Management	
Course Code : BVASC201	Semester: II
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 , IA: 25 , Total: 50
TH Exam Duration: 01 Hours	Scheme of Marking PR: --
Credit: 3	

Content		Hours
Unit – I	Introduction:	06
	Growth of industry, The management of men, materials and machines, the art of management, Sources of capital- industrial individual enterprise, private partnership and private Ltd. Co., Joint Stock Co. shares, debentures, financial agencies and their role in promoting industries. Break even analysis.	
Unit – II	Private sector and public sector:	06
	Public sector enterprise, merits and demerits of public sector industry and private sector industry, Line, staff and functional organizations, reasons for the choice of various types of organization, functions of different departments, viz. stores, purchase and sales departments relationship between individual departments.	
Unit – III	Wages & incentives:	06
	Definition of wages, real wage and nominal wage, systems of wage payment, incentives, financial and non - financial incentives, Essentials of a good wage plan, essentials of a good incentive scheme. Introduction to elements of cost & indirect expenses, Material cost, labour cost, fixed and variable overheads, components of cost, selling price, Factory expenses, administrative expenses, selling & distribution expenses, depreciation, obsolescence, interest on capital, Idleness, Repair and maintenance.	
Unit – IV	Labour, industrial & tax laws:	06
	Evolution of industrial law, factory act, workmen compensation act, payment of wages act, employee’s state insurance act, Industrial dispute act. Role of technician in industry: Position of technician in various engineering departments, Role of a supervisor in industry, Foremanship, duties and qualities of a good foreman.	
Unit – V	Material management:	06
	Introduction, Scope of Material Management selective control techniques- ABC analysis, Material handling, inventory control, Essential steps in inventory control, quality standards	
Books		
Name of Authors	Title of the Book	Publisher
S.C. Sharma	Industrial Management	Khanna Publishing House

Subject Name: Total Quality Management	
Course Code : BVASC202	Semester: II
Weekly Teaching Hours: TH: 03 Tut: 00	Scheme of Marking TH: 25 , IA: 25 , Total: 50
TH Exam Duration: 01 Hours	Scheme of Marking PR: --
Credit: 3	

Content		Hours
Unit – I	Introduction, Basic concepts of total quality management	06
	Introduction to Quality, Dimensions of Quality, Quality Planning, Concept and definition of quality cost, Determinants of Quality, Optimum cost of performance, Principles of TQM, Pillars of TQM, Introduction to leadership and Leadership roles, Quality council and Quality statement, Strategic Planning Process, Deming philosophy	
Unit – II	Continuous process improvement	06
	Input /output process Model, Juran trilogy, PDCA Cycle, 5 –‘S’ Housekeeping principle, Kaizen Seven tools of Quality (Q-7 tools), Check Sheet, Histogram, Cause and effect diagram, Pereto diagram, Stratification analysis, Scatter diagram, Control charts, Control chart for variables & process capability, Control chart for attributes.	
Unit – III	Management planning tools & Bench marking	06
	Affinity diagram, Relationship diagram, Tree diagram, Matrix diagram, Matrix data analysis, Arrow Diagram, Process decision programme chart (PDPC), Concept of bench marking, Reason to bench marking, Bench marking process, Types of bench marking, Benefits of bench marking	
Unit – IV	Just in time (JIT)	06
	JIT philosophy, Three elements of JIT, Principles of JIT Manufacturing, JIT Manufacturing building blocks, JIT benefits, Kanban & 2 Bin Systems	
Unit – V	Total productive maintenance (TPM)	06
	Concept of Total Productive Maintenance, Types of maintenance, OEE (Overall Equipment Efficiency), Stages in TPM implementation, Pillars of TPM, Difficulties faced in TPM implementation.	

Books		
Name of Authors	Title of the Book	Publisher
S.C. Sharma, M.P. Poonia,	Total Quality Management,	Khanna Publishing House.

Subject Name: Entrepreneurship		
Course Code : BVASC203		Semester: II
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 25 , IA: 25 , Total: 50
TH Exam Duration: 01 Hours		Scheme of Marking PR: --
Credit: 3		
Content		Hours
Unit – I	Entrepreneurship and entrepreneur	06
	Need of Employment and Opportunities, Essential Characteristics of a good Entrepreneur, Industrial Policy, Classification of industries- Micro, small scale, Medium scale, large scale, Type of industries- Production, Job based & Service	
Unit – II	Entrepreneurial Development	06
	Product identification/ selection, Site selection, Plant layout, Institutional support needed, Pre-market survey.	
Unit – III	Entrepreneurship Support System and Start-ups	06
	Introduction to start-up's, Role of District Industries Centre in setting up industry, Function of NSIC, SISI, NISIET, NRDC, SSIC, SIDO, NMTC, KVIC, RSMML, Role of state finance corporation, state electricity corporations, pollution control board, BIS, I.S.O. etc.	
Unit – IV	Introduction to Tax System, Insurance and Acts:	06
	Idea of income tax, sales tax, excise duty and custom duty, Industrial and fire insurance, procedure for industrial insurance, Introduction to Industrial acts, factory act, Workmen's compensation act 1923, Apprentices act 1961, Environmental protection act 1986	
Unit – V	Project Report Preparation	06
	Procedure of preparing a project report, Format of project report, Preparation of project report, Introduction to ISO: 9000 Series of Quality System.	

Subject Name: Garage Organization & Transport Management		
Course Code : BVASC204		Semester: II
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 25 , IA: 25 , Total: 50
TH Exam Duration: 01 Hours		Scheme of Marking PR: --
Credit: 3		
Content		Hours
Unit – I	LAYOUT OF GARAGE AND TOOLS & EQUIPMENT REQUIRED	06
	Location of modern automobile garage. Layout of a fully equipped modern garage. Major equipment used in repair, testing, and reconditioning of automobiles. Service Station equipment (compressor, washer, hydraulic ramp and other lifting devices etc.) Denting and painting tools and equipment. Layout of fuel filling station-cum-service station. Workshop safety.	
Unit – II	GARAGE PROCEDURE	06
	A typical garage organization chart. Duties of garage foreman. Vehicle selling-dealership, showroom, Terms of Warranty, after-sales service, advertising, and salesmanship. Diagnosing and estimating repairs. Booking of repairs. Job card, time card. Inspection and testing of repaired vehicles. Billing of repairs. Customer record. Purchase and sale of used vehicles. Insurance and accidental jobs. Safety in garages. Customer satisfaction. Time management.	
Unit – III	STORE ORGANISATION	06
	Stores and store-keeping procedure. Day book, ledger, stock register. Indenting and issue of spares and materials. Inventory control. Stocking of material - shelves, racks, bins; fuels and inflammable materials. Handling of liquids and acids. Duties and responsibilities of storekeeper and purchase officer. Tools-Storing and issuing.	
Unit – IV	FLEET MANAGEMENT	06
	Types of vehicles in a fleet - goods vehicles, tankers and carriers, delivery vans, fire fighting vehicles, break-down service vehicles, buses and luxury vehicles. Layout of a fleet maintenance depot, Duties of driver, conductor and mechanic, scheduling the maintenance of a fleet. Estimating the operating cost of transport vehicles	
Unit – V	MOTOR VEHICLE ACT	06
	Definition of vehicles, testing and certifying procedures, Registration of vehicles, Permits for passenger and goods vehicles, Licensing, Transfer of ownership. Essentials of driving and traffic regulations; signals and traffic signs.	

Books		
Name of Authors	Title of the Book	Publisher
AW Clair	Fleet Maintenance & Management:	---

Subject Name: Project

Course Code : BVASL205	Semester: II
Weekly Practicals: PR: 01 Tut: 00	Scheme of Marking TH: --
TH Exam Duration: --	Scheme of Marking PR: 50 , IA: 50 , Total: 100
Credit: 3	

Content

1. On the basis of learning in the vocational diploma, a project to be taken up by the student strengthening his/ her vocational skills

Group GAS2 of Qualifier Packs

Subject Name: Automotive Service Technician Level 5 (ASC/Q 1403)	
Course Code : BVASE206	Semester: II
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/qualification-title?nid=1026	

Subject Name: Spare Parts Operations Executive Level 5 (ASC/Q 1502)	
Course Code : BVASE207	Semester: II
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/qualification-title?nid=1246	

Subject Name: Industrial Engineer (Layout Design) (ASC/Q6401)	
Course Code : BVASE208	Semester: II
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/sites/default/files/MASTER%20OCCUPATIONAL%20MAP%20-%209_0.pdf	

Subject Name: Tool Designer (ASC/Q4001)	
Course Code : BVASE209	Semester: II
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/sites/default/files/QP-Tool%20designer.pdf	

Subject Name: Equipment Designer L5 (ASC/Q 6405)

Course Code : BVASE210	Semester: II
Weekly Skilling Hours: PR: 24 Tut: 00	Scheme of Marking TH: 00 , IA: 00 , Total: 00
PR Exam Duration: 06 Hours	Scheme of Marking PR: 150 , IA: 50 , Total: 200
Credit: 15	Choose any one from specified Group GAS1 of Qualification Packs
Syllabus for this qualifier Pack is available on https://www.nqr.gov.in/sites/default/files/QP-Equipment%20Designer.pdf	