

## **Programme Specific Outcomes: B.Voc. Automobile Technology (UBV(AT))**

**Name of the Department : B.Voc Automobile Technology**

### **Program Specific Outcomes**

**At the end of the programme, student will be able to**

1	Apply knowledge of automobiles and mechanical in solving engine related problems
2	Conduct and demonstrate the practicals on automobiles, as well as to analyze and interpret data
3	Manage automotive systems or equipments, parts that conforms to a given specification within ethical and economic constraints
4	Identify, solve and analyze the problems in various disciplines of automobiles
5	Communicate effectively in term of oral and written communication skills
6	Use techniques, skills and modern technics tools for professional practices in automobiles.





Mahatma Gandhi Vidyamandir's

**Loknete Vyankatrao Hiray Arts, Science and Commerce College,  
Panchavati, Nashik-422003**

(Affiliated to SPPU, Pune, Reaccredited with 'A' grade, Recipient of Best College Award by SPPU)

## **Course Outcomes of B.Voc.**

### **Department of Automobile Technology**

**Academic Year**

**2021-22**

## Course Outcomes: B.Voc. Automobile Technology (UBV(AT))

Class : F.Y.B.Voc		
Semester-I		
Paper	Course code & course title	At the end of the course, student will be able to
I	Workshop Technology-I UBV (ATT 11)	Learn and identify different parameters/functions/specifications of components used in Workshop.
		Understand the basic terms concepts and purpose of using workshop tools and application to automotive field.
		Understand need of using different workshop tools for various applications.
		Identify proper workshop tools as per the need of application.
		Understand the workshop ethics & workshop safety precautions.
		Understand different workshop tools & equipments used in automobile workshop.
II	I.C.Engine UBV (ATT 12)	Understand the types of engines, its constructions, and working.
		Understand the working of two stroke engine and four stroke engine and its applications.
		Learn the difference between two stroke engine, and four stroke engine.
		Understand the working cycles for the internal combustion engine.
		Learn basic concepts of internal combustion used in automobiles.
III	Engine components and their working-I UBV (ATT 13)	Identify different components of internal combustion engine used in automobiles.
		Understand basic components associated with engine.
		Understand the operation of different components used in engines of automobiles.
		Learn the construction, working, application of components used in automobiles.
		Demonstrate the different parts, components, systems used in engines.
		Learn the basic terms, definitions related to automotive engines.

<b>Paper</b>	<b>Course code &amp; course title</b>	<b>At the end of the course, student will be able to</b>
I	Workshop Technology-I (Practical) UBV (ATP 11)	Learn and identify different functions/specifications of tools used in Workshop
		Understand the basic terms concepts and purpose of using workshop tools and application to automotive field
		Understand the workshop ethics & workshop safety precautions.
		Understand different workshop tools & equipments used in automobile workshop.
II	I.C.Engine (Practical) UBV (ATP 12)	Understand the types of engines, its constructions.
		Understand the working of two stroke engine and four stroke engine.
		Learn the difference between two stroke engine, and four stroke engine.
		Understand the working cycles for the internal combustion engine.
III	Engine components and their working-I (Practical) UBV (ATP 13)	Identify different components of internal combustion engine used in automobiles.
		Understand the operation of different components used in engines of automobiles.
		Learn the construction, working, application of components used in automobiles.
		Demonstrate the different parts, components, systems used in engines.

**Class : F.Y.B.Voc****Semester-II**

<b>Paper</b>	<b>Course code &amp; course title</b>	<b>At the end of the course, student will be able to</b>
<b>I</b>	Workshop tools and equipments UBV (ATT 21)	Understand the different workshop tools used in automobiles.
		Understand the different equipments used in automobile workshop
		Learn and identify different parameters/functions/specifications of components used in Workshop
		Understand the basic terms concepts and purpose of using workshop tools and application to automotive field
		Identify proper workshop tools as per the need of application.
		Understand need of using different workshop tools for various applications.
<b>II</b>	Automotive dealership UBV (ATT 22)	Learn the concept of automotive dealership.
		Understand the working environment of automotive dealer showroom.
		Understand the different sections of automotive dealer showroom.
		Understand the role of service adviser, technician, manager, insurance adviser etc.
		Learn basic terms concepts and definitions related to dealership.
<b>III</b>	Engine components and their working-II UBV (ATT 23)	Identify different components of internal combustion engine used in automobiles.
		Understand basic components associated with engine.
		Understand the operation of different components used in engines of automobiles.
		Learn the construction, working, application of components used in automobiles.
		Demonstrate the different parts, components, systems used in engines.
		Understand the basic terms concepts and definitions related to engines.

I	Workshop tools and equipments (Practical) UBV (ATP 21)	Understand the different equipments used in automobile workshop & its functioning.
		Learn and identify functions/specifications of equipments used in Workshop
		Understand the basic terms concepts and purpose of using workshop tools and application to automotive field.
		Identify proper workshop tools as per the need of application.
		Understand need of using different workshop tools for various applications.
II	Automotive dealership (Practical) UBV (ATP 22)	Understand the working environment of automotive dealer showroom.
		Understand the different sections of automotive dealer showroom.
		Understand the role of service adviser, technician, manager, insurance adviser etc.
		Learn basic terms concepts and definitions related to dealership.
III	Engine components and their working-II (Practical) UBV (ATP 23)	Identify different components of internal combustion engine used in automobiles & its functioning.
		Understand the operation of different components used in engines of automobiles.
		Learn the construction, working, application of components used in automobiles.
		Demonstrate the different parts, components, systems used in engines.
		Understand the basic terms concepts and definitions related to engines.

**Class : S.Y.B.Voc.**

**Semester-III**

<b>Paper</b>	<b>Course code &amp; course title</b>	<b>At the end of the course, student will be able to</b>
I	MPFI and CRDI System UBV (ATT 31)	Understand the Multipoint Fuel Injection System.(MPFI)
		Understand Common Rail Direct Injection System.(CRDI)
		Understand the construction and working of MPFI and CRDI System.
		Learn the different sensors used in MPFI and CRDI System.
		Understand the construction and working of sensors used in MPFI and CRDI System.
		Learn the difference between MPFI and CRDI System, its merits and de-merits.
II	Ignition System UBV (ATT 32)	Understand the purpose of ignition system used in automotive vehicles.
		Learn the construction and working of ignition system used in automobiles.
		Learn the different components of ignition systems used in automobiles.
		Understand the different types of ignition system, its construction & working -battery ignition, magneto ignition etc.
		Understand and compare different types of ignition system based on different parameters.
		Fault finding & diagnosis of Ignition system, its merits & demerits.
III	Engine Cooling System UBV (ATT 33)	Understand the purpose of cooling system used in automobiles.
		Understand the construction and working of cooling system.
		Demonstrate the different parts of cooling system used in automobiles.
		Learn different types of cooling system and understand its working.
		Learn and understand construction and working of different components of cooling system.
		Learn difference between cooling systems, fault finding and diagnosis of cooling system.
I	MPFI and CRDI System	Understand the functioning of Multipoint Fuel Injection System.(MPFI)
		Understand the functioning of Common Rail Direct Injection System.(CRDI)



	(Practical) UBV (ATP 31)	Learn & understand the different sensors used in MPFI and CRDI System & its functioning.
		Learn the difference between MPFI and CRDI System, its merits and de-merits.
II	Ignition System (Practical) UBV (ATP 32)	Learn & understand the construction and working of ignition system used in automobiles.
		Learn the different components of ignition systems used in automobiles.
		Understand the different types of ignition system, its construction & working -battery ignition, magneto ignition etc.
		Understand and compare different types of ignition system based on different parameters.
		Fault finding & diagnosis of Ignition system- find out the causes of faults & remedies to it.
III	Engine Cooling System (Practical) UBV (ATP 33)	Understand the construction and working of cooling system.
		Demonstrate the different parts of cooling system used in automobiles.
		Learn different types of cooling system and understand its working.
		Learn and understand construction and working of different components of cooling system.
<b>Semester-IV</b>		
I	Engine lubrication System UBV (ATT 41)	Understand the purpose of lubrication system used in automobiles.
		Understand, Classify and compare different types of lubrication system.
		Understand the construction and working of lubrication system used in automobiles.
		Demonstrate the different parts of lubrication system used in automobiles.
		Learn the different types of lubrication system, its construction, working etc.
		Learn and compare different lubrication system, fault finding diagnosis lubrication system.
II	Fuel system and valve mechanism UBV (ATT 42)	Learn the purpose of fuel system used in automobiles.
		Understand, demonstrate different parts of fuel system and learn the working of fuel system.
		Understand purpose of valve mechanism used in automobile.

		Learn different parts of fuel system and valve mechanism.
		Understand fuel injection system its working, types, applications etc.
		Understand types of fuel pump and its working, fault finding and diagnosis of fuel system.
III	Auto Electrical and Electronics UBV (ATT 43)	Understand the purpose of starting system used in automobiles.
		Understand the working of starting system, its components working etc.
		Learn and understand the charging system used in automobiles, Its components etc.
		Learn the function batteries, types of batteries, its working and difference between batteries.
		Demonstrate lighting system used in automobiles, wiring circuits, headlights, light switches etc.
		Learn the working of direction indicators, ventilating system, air conditioning system, central locking facility, Electronic GPS System etc.
I	Engine lubrication system (Practical) UBV (ATP 41)	Understand, Classify and compare different types of lubrication system.
		Understand the construction and working of lubrication system used in automobiles.
		Demonstrate the different parts of lubrication system used in automobiles.
		Learn the different types of lubrication system, its construction, working etc.
		Fault finding diagnosis lubrication system - find out the causes & remedies to the faults occurs
II	Fuel system and valve mechanism (Practical) UBV (ATP 42)	Understand, demonstrate different parts of fuel system and learn the working of fuel system.
		Understand purpose of valve mechanism used in automobile & its working.
		Understand fuel injection system its working, types, applications etc.
		Understand types of fuel pump and its working, fault findings and diagnosis of fuel system.
III		Understand the working of starting system, its components working etc.

	Auto Electrical and Electronics (Practical) UBV (ATP 43)	Learn and understand the charging system used in automobiles, its components etc.
		Learn the function batteries, types of batteries, its working and difference between batteries.
		Demonstrate lighting system used in automobiles, wiring circuits, headlights, light switches etc.
		Learn the working of direction indicators, ventilating system, air conditioning system, central locking facility, Electronic GPS System etc.

Class : T.Y.B.Voc		
Semester-V		
Paper	Course code & course title	At the end of the course, student will be able to
I	Transmission System UBV (ATT 51)	Learn and understand purpose of transmission system.
		Understand the components of transmission system and its working.
		Understand types of transmission .
		Learn and understand types of gearbox and its construction and working.
		Understand the types of clutch its construction and working.
		Fault finding and diagnosis of transmission system.
II	Steering, Brakes and Suspension system UBV (ATT 52)	Understand steering system in automobile and its working.
		Learn and understand types of steering gearbox its construction and working.
		Understand the braking system and its working.
		Learn and understand brakes, types of braking system, its working.
		Understand the suspension system, its function.
Understand the types of suspension system.		
III	Fuels and emission control UBV (ATT 53)	Understand the types of fuel and its purpose.
		Understand the physical and chemical properties of fuel.
		Understand the grades of fuel.

		Understand emission norms : BS norms, EURO norms, difference between BS & EURO norms.
		Understand exhaust system working, exhaust gas regulation, diesel particulate filter working etc.
		Learn and understand catalytic converter, its types, working.
I	Transmission System (Practical) UBV (ATP 51)	Understand the components of transmission system and its working.
		Learn and understand types of gearbox and its construction and working.
		Understand the types of clutch its construction and working.
		Fault finding and diagnosis of transmission system- faults occurs & remedies to it.
II	Steering, Brakes and Suspension system (Practical) UBV (ATP 52)	Understand steering system in automobile and its working.
		Learn and understand types of steering gearbox its construction and working.
		Understand the braking system and its working.
		Learn and understand brakes, types of braking system, its working.
		Understand the suspension system, its function.
III	Fuels and emission control (Practical) UBV (ATP 53)	Understand the types of fuel and its purpose.
		Understand the physical and chemical properties of fuel, grades of fuel.
		Understand emission norms : BS norms, EURO norms, difference between BS & EURO norms.
		Understand exhaust system working, exhaust gas regulation, diesel particulate filter working etc.
		Learn and understand catalytic converter, its types, working.
<b>Semester-VI</b>		
<b>Paper</b>	<b>Course code &amp; course title</b>	<b>At the end of the course, student will be able to</b>
I		Learn various automotive diagnostic tools
		Understand & learn fault finding and diagnosis of transmission system.

	Fault Finding & Diagnosis UBV (ATT 61)	Understand & learn fault finding and diagnosis of steering, brakes & suspension system.
		Understand & learn fault finding & diagnosis of various systems in automobiles- cooling system, lubrication system, ignition system, internal combustion engine etc.
		Understand & learn fault finding & diagnosis of various components of automobiles.
		Learn the different ways to find the faults & remedies on it of automobile systems.
II	Automotive System & Electric Cars UBV (ATT 62)	Learn and understand the DC motors & BLDC motor construction & working, its types, differences etc
		Understand the Hybrid cars structure, its working, applications, its types etc.
		Understand the electric cars structure, its working, applications etc.
		Learn & understand the difference between hybrid & electric cars, merits & demerits of use of hybrid & electric cars
		Learn and demonstrate the various systems in automobiles- antilock braking system, electronic brake distributor etc.
		Learn and demonstrate the various techniques used in automobiles- VVTI, I VTEC etc. types of batteries, controllers, regulators.
III	Rules & Regulations of Automobiles UBV (ATT 63)	Introduction to work profile of RTO, learn & understand the safety rules for automobile.
		Learn & understand the road signs, emission norms & its importance
		Study of the Motor Vehicle Act 1988 & 2018
		Learn & understand the types of carriage permits, its procedure, requirements, how to transfer & cancel, conditions for different types of carriage permits etc.
		Learn & understand the types of taxes for vehicles its methods & conditions, tax exemption
		Learn & understand the Motor vehicle insurance, its classification, claims
I	Fault Finding & Diagnosis	Learn various automotive diagnostic tools working.
		Understand & learn fault finding and diagnosis of transmission system.

	(Practical) UBV (ATP 61)	Understand & learn fault finding and diagnosis of steering, brakes & suspension system.
		Understand & learn fault finding & diagnosis of various systems in automobiles- cooling system, lubrication system, ignition system, internal combustion engine etc.
		Understand & learn fault finding & diagnosis of various components of automobiles.
		Learn the different ways to find the faults & remedies on it of automobile systems.
II	Automotive System & Electric Cars (Practical) UBV (ATT 62)	Learn and understand the DC motors & BLDC motor construction & working, its types, differences etc
		Understand the Hybrid cars structure, its working, applications, its types etc.
		Understand the electric cars structure, its working, applications etc.
		Learn & understand the difference between hybrid & electric cars, merits & demerits of use of hybrid & electric cars
		Learn and demonstrate the various systems in automobiles- antilock braking system, electronic brake distributor etc.
		Learn and demonstrate the various techniques used in automobiles- VVTI, I VTEC etc. types of batteries, controllers, regulators.
III	Rules & Regulations of Automobiles (Practical) UBV (ATT 63)	Introduction to work profile of RTO, learn & understand the safety rules for automobile.
		Learn & understand the road signs, emission norms & its importance
		Study of the Motor Vehicle Act 1988 & 2018
		Learn & understand the types of carriage permits, its procedure, requirements, how to transfer & cancel, conditions for different types of carriage permits etc.
		Learn & understand the types of taxes for vehicles its methods & conditions, tax exemption .
		Learn & understand the Motor vehicle insurance, its classification, claims