

*Dr. Babasaheb Ambedkar Technological University (Established as a University of  
Technology in the State of Maharashtra)*

**(under Maharashtra Act No. XXIX of 2014)**

**P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra Telephone and Fax. : 02140 - 275142**

**[www.dbatu.ac.in](http://www.dbatu.ac.in)**



**Detailed Syllabus for  
First Year**

**B.Voc Program in Automobile Servicing**

**Academic year July 2019-20**

Regulation, Scheme and syllabus for B.Voc Degree Programme in  
**Automobile Servicing**  
(Dr Babasaheb Ambedkar Technological University, Lonere)

1. Introduction

It has been a long felt necessity to align higher education with the emerging needs of the economy so as to ensure that the graduates of higher education system have adequate knowledge and skills for employment and entrepreneurship. The higher education system has to incorporate the requirements of various industries in its curriculum, in an innovative and flexible manner while developing a holistic and well groomed graduate.

Under the National Skills Development Corporation, many Sector Skill Councils representing respective industries have/are being established. One of the mandates of Sector Skill Councils is to develop National Occupational Standards (NOSs) for various job roles in their respective industries. It is important to embed the competencies required for specific job roles in the higher education system for creating employable graduates.

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF. The B.Voc. Programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs along with broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participation in accelerating India's economy by gaining appropriate employment, becoming entrepreneurs and creating appropriate knowledge.

## 2. Objectives

2.1 To provide judicious mix of skills relating to a profession and appropriate content of General Education.

2.2 To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.

2.3 To provide flexibility to the students by means of pre-defined entry and multiple exit points.

2.4 To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local and national industry are also expected to be equipped to become part of the global workforce.

2.5 To provide vertical mobility to students coming out of 10+2 with vocational subjects.

## 3. Levels of Awards

The certification levels will lead to Diploma/Advanced Diploma/B. Voc. Degree in one or more vocational areas and will be offered under the aegis of the University. This is out-lined in Table I.

<b>Awards</b>	<b>Award Duration</b>	<b>Corresponding NSQF level</b>
Diploma	1 Year	5
Advanced Diploma	2 Years	6
B.Voc. Degree	3 Years	7

**Table I : Awards**

#### 4. Eligibility for admission in B.Voc

The eligibility condition for admission to B.Voc. Programme shall be 10+2 or equivalent, in any stream.

#### 5. CREDIT STRUCTURE

<b>NSQF Level</b>	<b>Skill Component Credits</b>	<b>General Educational Credits</b>	<b>Normal Calendar Duration</b>	<b>Exit Points/ Awards</b>
Year 3	36	24	Six Semester	B. Voc.
Year 2	36	24	Four Semester	Advanced Diploma
Year 1	36	24	Two Semester	Diploma
<b>Total</b>	<b>108</b>	<b>72</b>		

#### 6. The class structure and pattern of the examination

- The Number of students in a theory class shall not exceed 25.
- Maximum number of students in a batch for practical in first four semesters shall consist of 20 students and for fifth & sixth semester the batch shall consist of 15 students.
- The rules for admission to the subsequent (next) semesters will be the same as per the University guidelines.
- The Theory (ESE) and Practical Examinations will be conducted by the University at the end of each semester.
- The marks of internal (IA) and practical exam (ESE) should be submitted to University in the prescribed format.
- Assessment of skill component should be done by sector skill council or industry partner.

## 7. PROGRAMME STRUCTURE

### Semester-I

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit	Total Marks		
			L	T	P	ISE	MSE	ESE				
<b>General Education</b>												
<b>Semester I - Theory</b>												
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	2	25	0	25	3	50		
<b>Total</b>									<b>12</b>	<b>200</b>		
<b>Skill Components</b>												
<b>Lab/Practical's</b>												
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		
<b>On-Job-Training (OJT)/Qualification Packs (ANY 1)</b>									<b>Group GAS1</b>			
7	BVASE107	<b>Elective:</b> Automotive Service Technician Level 5 (ASC/Q 1403)	200						15		200	
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)										
<b>Total</b>									<b>18</b>	<b>300</b>		

### Semester-II

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit	Total Marks
			L	T	P	ISE	MSE	ESE		
<b>Semester II- Theory</b>										
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
		<b>Total</b>							<b>12</b>	<b>200</b>
<b>Skill Components</b>										
<b>Lab/Practical's</b>										
5	BVASL205	Project	0	0	3	25	0	25	3	100
<b>On-Job-Training (OJT)/Qualification Packs (ANY 1)</b>									Group GEM2	
6	BVASE212	<b>Elective:</b> One more QP to be opted from the QPs mentioned in the Level 5 first semester				200			15	200
		<b>Total</b>							<b>18</b>	<b>300</b>

### Semester-III

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit	Total Marks
			L	T	P	ISE	MSE	ESE		
<b>Semester II- Theory</b>										
1	BVASC301	Automobile Electrical System	3	0	-	25	0	25	3	50
2	BVASC302	Automobile Drawing & Design	3	0	-	25	0	250	3	50
3	BVASC303	Automobile Engine Systems	3	0	-	25	0	25	3	50
4	BVASC304	Auto Body Repair, Denting & Painting	3	0	-	25	0	25	3	50
<b>Total</b>									<b>12</b>	<b>200</b>
<b>Skill Components</b>										
<b>Lab/Practical's</b>										
5	BVASL305	Automobile Workshop - I	0	0	2	25	0	25	1.5	50
6	BVASL306	Auto Body Repair, Denting & Painting Workshop	0	0	2	25	0	25	1.5	50
<b>On-Job-Training (OJT)/Qualification Packs (ANY 1)</b>									Group GEM3	
6	BVASE313	Automotive Service Technician Level 6 (ASC/Q1404)	15						200	
7	BVASE314	Automation Specialist (ASC/Q6807)	200						15	200
8	BVASE315	Assembly Line Machine Setter (ASC/Q3603)								
9	BVASE316	Process Design Engineer (ASC/Q6404)								
10	BVASE317	Quality Controller (ASC/Q1605)								
<b>Total</b>									<b>18</b>	<b>300</b>

### Semester-IV

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit	Total Marks
			L	T	P	ISE	MSE	ESE		
<b>Semester II- Theory</b>										
1	BVASC401	Automobile Engine Systems	3	0	-	25	0	25	3	50
2	BVASC402	Automotive Refrigeration and Air Conditioning	3	0	-	25	0	250	3	50
3	BVASC403	Vehicle Performance and Testing	3	0	-	25	0	25	3	50
4	BVASC404	Electrical & Hybrid Vehicles – II	3	0	-	25	0	25	3	50
<b>Total</b>									<b>12</b>	<b>200</b>
<b>Skill Components</b>										
<b>Lab/Practical's</b>										
5	BVASL405	Automotive RAC Lab	0	0	2	25	0	25	1.5	50
6	BVASL406	Vehicle Performance and Testing Lab	0	0	2	25	0	25	1.5	50
<b>On-Job-Training (OJT)/Qualification Packs (ANY 1)</b>									Group GEM4	
6	BVASE418	One more QP to be opted from the QPs mentioned in the Level 6 first semester				200			15	200
<b>Total</b>									<b>18</b>	<b>300</b>



### Semester-V

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit	Total Marks		
			L	T	P	ISE	MSE	ESE				
<b>Semester II- Theory</b>												
1	BVASC501	Automotive System Design	3	0	-	25	0	25	3	50		
2	BVASC502	Alternative Fuel & Emission Control	3	0	-	25	0	250	3	50		
3	BVASC503	Automobile Maintenance Service & Repairs -I	3	0	-	25	0	25	3	50		
4	BVASC504	Auto NVH - I	3	0	-	25	0	25	3	50		
		<b>Total</b>							<b>12</b>	<b>200</b>		
<b>Skill Components</b>												
<b>Lab/Practical's</b>												
5	BVASL505	Automobile Workshop - II	0	0	2	25	0	25	1.5	50		
6	BVASL506	Design of Automotive Systems Lab	0	0	2	25	0	25	1.5	50		
<b>On-Job-Training (OJT)/Qualification Packs (ANY 1)</b>									Group GEM5			
7	BVASE519	Spare Parts Operations In charge (ASC/Q1503)	200						15		200	
8	BVASE520	Body Shop In-Charge (ASC/Q1413)										
9	BVASE521	Service Supervisor (ASC/Q1412)										
10	BVASE522	Testing Manager (ASC/Q8405)										
11	BVASE523	Product Design Manager L7 (ASC/Q8103)										
		<b>Total</b>							<b>18</b>	<b>300</b>		

### Semester-VI

Sr. No.	Code	Course title	Weekly Teaching hours			Evaluation Scheme			Credit	Total Marks		
			L	T	P	ISE	MSE	ESE				
<b>Semester II- Theory</b>												
1	BVASC601	Automobile Maintenance Service & Repairs - II	3	0	-	25	0	25	3	50		
2	BVASC602	Auto NVH - II	3	0	-	25	0	250	3	50		
3	BVASC603	Off-road Vehicles	3	0	-	25	0	25	3	50		
		<b>Total</b>							<b>12</b>	<b>200</b>		
<b>Skill Components</b>												
<b>Lab/Practical's</b>												
4	BVASL604	Project	0	0	6	75	0	75	6	150		
<b>On-Job-Training (OJT)/Qualification Packs (ANY 1)</b>									Group GEM6			
5	BVASE624	Spare Parts Operations In charge (ASC/Q1503)	200						15		200	
6	BVASE625	Body Shop In-Charge (ASC/Q1413)										
7	BVASE626	Service Supervisor (ASC/Q1412)										
8	BVASE627	Testing Manager (ASC/Q8405)										
9	BVASE628	Product Design Manager L7 (ASC/Q8103)										
		<b>Total</b>							<b>21</b>	<b>350</b>		