DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD.

CIRCULAR NO.SU/Science & Technology./B.VOC.Sturcture/ 03 /2022.

It is hereby informed to all concerned that, on the recommendation of Ad-hoc Board in Vocational Studies and Dean, Faculty of Science & Technology the Hon'ble Vice-Chancellor in his emergency powers under Section -12 (7) of the Maharashtra public Universities Act, 2016 has accepted the **revised Structure of B.Voc Courses under the Faculty of Science & Technology** on behalf of the Academic Council to be applied from the Academic Year 2022-23 and onwards.

All concerned are requested to note the contents of this Structure and bring notice to the students, teachers and staff information and necessary action. It is mandatory to all concerned to strictly follow this structure while framing new syllabus of B.Voc courses failing which the syllabus will not be accepted.

University campus,
Aurangabad-431 004.
Ref. No.SU/B.voc./Curri./2021-22/3844-54

Date: 14.07.2022

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Deputy Registrar,
Academic [Syllabus]
Section.

Copy forwarded with compliments to :-

1] **The Principal All Affiliated Concerned Colleges, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.**
2] **The Director,** University Network & Information Centre, UNIC, with **a request to upload the curriculum along with this Circular on University Website.**

Copy to :-

1] The Director, Board of Examinations & Evaluation, Dr.BAMU, A'bad
2] The Concerned Section, Examination Branch,
3] The Section Officer, [Eligibility Unit],
4] The Programmer [Computer Unit-1] Examinations, section, Dr. BAMU, A'bad
5] The Programmer [Computer Unit-2] Examinations, section, Dr. BAMU, A'bad
6] The In-charge, [E- Suvidha Kendra],
7] The B.Voc Section, Dr. BAMU, A'bad
8] The Public Relation Officer,
9] The Record Keeper,

2022-23

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (MS)

Curriculum Structure

Bachelor of Vocation

(B.VOC.)

(Faculty of Science and Technology)

Choice Based Credit System

(Effective from Academic Year 2022-23)

06/01/2022

08/01/22

Dean
Faculty of Science & Technology
Babasaheb Ambedkar Marathwada
University, Aurangabad

The Bachelor of Vocation (B. VOC.) program run under Faculty of Science and Technology of the University, is divided into six semesters shaving **180** credits. Each semester has courses categorized under **General Education Components** and **Skill Development Components**.

Preamble:

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad proposes to offer a three year Bachelor programme in Vocation (B. Voc.) program which are being run University Department and various affiliated colleges. The curriculum design of this program is undertaken in the following framework-

a) Although there has been remarkable progress in all sectors of education in last couple of decades, the less regulated area of the education sector-vocational training—seems to have lost its significance/importance. This has led to the widening gap between the supply and demand for skilled manpower across various industries and R&D organizations. This shortage of skills has translated directly into unemployment among an increasing number of graduates who pass-out every year and are forced to be re-trained in order to become marketable.

These programme are designed to produce skilled manpower so that wide variety of options in job sectors would be available and it will improve the opportunities for the unemployed youths in the country in both the private and public sectors.

b) According to a study conducted by the Associated Chambers of Commerce and Industry of India (ASSOCHAM), there will be a deficit of 40 million working professionals by the year 2020 and the employers would face the difficulty of filling positions because of the dearth of suitable talent and skilled person.

These programme aim to provide concrete solution for these problems and would facilitate to improve:

(i) Quality of training
(ii) High drop-out rates
(iii) Linkages with Universities and Industry
(iv) Inadequacy of resources

c) These programme are intended to offer practical training and skills needed to pursue an occupation straight away. It will provide options to the students to select the courses of their choice which are directly aligned to land a job in a chosen profession or a skilled trade. One of the end results of these programme is to enable an individual to attain self-employment.

Program Educational Objectives:

The objectives of B.Voc. (Skill Specific) program are to produce graduates who -

1. Are equipped with time relevant knowledge of specialized Skills to address the multidisciplinary demand of the target skill sector.
2. Have a broad-based background to practice target oriented skills in concerned specialization in manufacturing/service industries and Government settings meeting the growth expectations of stakeholders.
3. Have an ability to pursue higher studies and succeed in academic and professional careers.
4. Have the ability to address professional demands individually and as a team member communicating effectively in technical environment using modern tools.
5. Recognize the need for and possess the ability to engage in lifelong learning.
6. Will be sensitive to consequences of their work both ethically and professionally for productive professional career.

Program Outcomes (PO):

Vocational Education is education that prepares the students for specific trades, crafts and careers at various levels and scopes. Scope of modern fabric of vocational education builds Human resource from a trade/ craftsmanship, technician or professional position in R & D organizations.

The Program Outcomes are the skills and knowledge which the students have at each exit level/at the time of graduation. These Outcomes are generic and are common to all exit levels mentioned in the programme structure. Graduates of the B.Voc. program are expected to -

PO1. Apply broad based fundamental knowledge of the specific skill based trade for the solution of target skill sector.

PO2. Identify industry domain related problems at varied complexity and analyze the same to formulate/ develop substantiated conclusion using first principles of domain sectors and technical literature.

PO3. Design / develop solutions for broad based problems in the target skill based trade to address changing challenges put forward by market demand/ stakeholder

PO4. Design and conduct technology enabled experiments, analyze the resulting data and interpret the same to provide valid conclusions

PO5. Use the techniques, skills and modern tools necessary skill based trade to practice with clear understanding of limitations.

PO6. Apply broad understanding of ethical and professional skill based trade practice in the context of global, economic, environmental and societal realities while encompassing relevant contemporary issues.

PO7. Apply broad understanding of impact of skill based trade in a global, economic, environmental and societal context.

PO8. Apply ability to develop practical solutions for skill trade problems within positive professional and ethical boundaries.

PO9. Function effectively as a leader and as well as team member in diverse/ multidisciplinary environments.

PO10. Communicate effectively in oral and written format addressing specific professional/ social demands.

PO11. Demonstrate knowledge and understanding of the first principles of skill trade and apply these to one's own work as a member and leader in a team, to complete project in any environment.

PO12. Recognize the need for and have the ability to acquire advance knowledge for addressing the changing technological demands of the target skill trade.

Program Specific Outcomes (PSO):

Graduates of the B.Voc. (Skill Specific) program are expected to -

1. Apply broad based fundamental knowledge of specialized skills for the solution of concerned manufacturing and service industries related problems.

2. Identify demand oriented and need based skillsets at varied complexity and analyze the same to formulate/ develop substantiated conclusion.

3. Design and conduct technology enabled experiments, analyze the resulting data and interpret the same to provide valid conclusions.

4. Use the techniques, skills and modern tools necessary for concerned skill sectors for clear understanding of the limitations.

Exit Options:

The program allows exit of a student in an intermediate stage, on successful employment. Scopes will be there for further continuation of study. The other wise exit options will be as follows-

Exit Point	*Duration*	*Diploma / Degree to be Offered*
First exit	After 6 months	Certificate in Vocation
Second exit	After 1 yr.	Diploma in Vocation (D. Voc.)
Third exit	After 2 yrs.	Advanced Diploma in Vocation (Adv. D. Voc.)
Fourth exit	After 3 yrs.	Bachelor in Vocation (B. Voc.)

Eligibility:

As per necessity of respective B. VOC Program

Admission / Promotion Process:

In response to the advertisement for registration, interested students will have to register themselves for a Common Entrance Test (CET)/ Merit based admission process. Admission will be done on the basis of performance of students at Common Entrance Test (CET)/ Marks scored in qualifying examination.

A candidate who has sought admission to Semester – I shall be admitted to Semester – II automatically. A candidate who has passed 75% of the papers at First Year (First and Second Semesters together) examinations shall be allowed to take admissions in third semester. Similarly, a candidate who has passed 75% of the papers at the Second Year (Third and Fourth Semesters together) examinations shall be allowed to take admission to the Fifth semester. However, if a candidate has not passed the First and Second Semester examinations, he shall not be allowed to take admission to the Fifth Semester. Appearance in the First, Third and Fifth semester is compulsory to get promoted to next semester.

Choice Based Credit System (CBCS):

The choice based credit system is going to be adopted. This provides flexibility to make the system more responsive to the changing needs of our students, the professionals and society.

It gives greater freedom to students to determine their own pace of study. The credit based system also facilitates the transfer of credits.

- Students will have to earn 30 credits for the award of Six Month Certificate in Vocation
- Students will have to earn 60 credits for the award of one year Diploma in Vocation (D. Voc.)
- Students will have to earn 120 credits for the award of two year Advance Diploma in Vocation (Adv. D. Voc.)
- Students will have to earn 180 credits for the award of three year Bachelor Degree in Vocation (B. Voc.)

Credit-to-contact hour Mapping:

(a) One Credit would mean equivalent of 15 contact hours for theory lecture.

(b) For lab course/ workshops/internship/field work/project, the credit weightage for equivalent hours shall be 50% that for lectures .

(c) For self- learning, based on e-content or otherwise, the credit weightage for equivalent hours of study should be 50% or less of that for lectures/workshops.

Attendance:

Students must have 75 % of attendance in each course for appearing examination otherwise he / she will not be strictly allowed for appearing the examination of each course.

Evaluation Methods:

The assessment will be based on 20: 80 ratio of continuous internal assessment (CIA) and semester end examination (SEE). Performance will be decided after combining performance in CIA and SEE. In case of failure in SEE in particular course(s), exam will be conducted in immediate subsequent semester. However, if a student fails in CIA (considering independent CIA score), he/she may appear for the same CIA, at his/her own responsibility in the next academic year, when the same course is offered during regular academic session.

Continuous Internal Assessment (CIA):

(A) For 4 credit courses-

There will be 20 marks for Continuous Internal Assessment. Two internal tests (of 20 marks each) will be conducted, after completion of 40% and 80% of the curriculum respectively.

Average performance of the two tests will be considered for final marks-memo preparation. The setting of question papers and the assessment will be done by concerned teacher.

(B) For 2 credit courses-

There will be 10 marks for Continuous Internal Assessment. Two internal tests (of 10 marks each) will be conducted, after completion of 40% and 80% of the curriculum respectively. Average performance of the two tests will be considered for final marks-memo preparation. The setting of question papers and the assessment will be done by concerned teacher.

Semester End Examination (SEE):

The semester end theory examination for each theory course of 4 credits will be of 80 marks, whereas, for 2 credit theory course, the same will be of 40 marks. Therefore, the total marks shall be 100 for 4 credit theory course (80 marks semester end exam + 20 marks CIA) and 50 for 2 credit theory course (40 marks semester end exam + 10 marks CIA).

Pattern of semester end question paper will be as below:

(A) For 4 credit courses-

- The semester end examination of theory course will have two parts (20+60 = 80 Marks)
- Part A will be consisting of 10 questions having 2 marks each (multiple choice questions / fill in the blanks/ answer in one sentence) as compulsory questions and it should cover entire course syllabus (20 Marks)
- Part B will contain 05 questions of 12 marks each with equal weightage on every module. Each of these questions will have two options, from which students will have to attempt any one.
- 20 to 30% weightage can be given to problems/ numerical (wherever applicable) wherein use of non-programmable scientific calculator may be allowed.
- Number of sub questions (with allotment of marks) in a question may be decided by the examiner.

(B) For 2 credit courses-

- The semester end examination of theory course will have two parts (10+30 = 40 Marks)
- Part A will be consisting of 05 questions having 2 marks each (multiple choice questions / fill in the blanks/ answer in one sentence) as compulsory questions and it should cover

entire course syllabus (10 Marks)

- Part B will contain 05 questions of 06 marks each with equal weightage on every module. Each of these questions will have two options, from which students will have to attempt any one.

- 20 to 30% weightage can be given to problems/ numerical (wherever applicable) wherein use of non-programmable scientific calculator may be allowed.

- Number of sub questions (with allotment of marks) in a question may be decided by the examiner.

Regarding practical examinations, the assessment will be based on 50: 50 ratio of continuous internal assessment (CIA) and semester end examination (SEE). During each semester, student must perform at least six experiments from every laboratory course. Internal and external (Semester end) practical examination will be conducted at the end of each semester.

Earning Credits:

At the end of every semester, a letter grade will be awarded in each course for which a student had registered. A student's performance will be measured by the number of credits that he/she earned by the weighted Grade Point Average (GPA). The SGPA (Semester Grade Point Average) will be awarded after completion of respective semester and the CGPA (Cumulative Grade Point Average) will be awarded at the respective exit point.

Grading System:

The grading reflects a student-own proficiency in the course. A ten point rating scale shall be used for the evaluation of the performance of the students to provide letter grade for each course and overall grade for the Bachelor Program. Grade points are based on the total number of marks obtained by him / her in all heads of the examination of the course. The grade points and their equivalent range of marks are shown in Table-I

Table – I : Grade and Grade Points

Grade Point	Letter Grade	Description
10	O	Outstanding
9	A+	Excellent
8	A	Very Good
7	B+	Good
6	B	Above Average
5	C	Average
4	P	Pass
0	F	Fail
0	Ab	Absent

(A student obtaining Grade F and Ab should be considered failed and he/she will be required to reappear in the examination)

Computation of Semester Grade Point Average System (SGPA) and Cumulative Grade Point Average (CGPA):

The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the course components taken by a student and the sum of the number of credits of all the courses undergone by a student in a semester,

i.e. SGPA (Si) = $\sum$(Ci x Gi) / $\sum$Ci

where 'Ci' is the number of credits of the ith course component and 'Gi' is the grade point scored by the student in the ith course component.

The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

CGPA = $\sum$(Ci x Si) / $\sum$ Ci

Where 'Si' is the SGPA of the ith semester and Ci is the total number of credits in that semester.

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

The skill component would be taken as one of the course components in calculation of SGPA and CGPA with given credit weightage at respective level.

Grade Card

Results will be declared by the Centre and the grade card (containing the grades obtained by the student along with SGPA) will be issued by the university after completion of every semester. The grade card will be consisting of following details.

- Title of the courses along with code opted by the student. Credits associated with the course.
- Grades and grade points secured by the student.
- Total credits earned by the student in a particular semester. Total credits earned by the students till that semester.
- SGPA of the student.
- CGPA of the student (at respective exit point).

Cumulative Grade Card

The grade card showing details grades secured by the student in each subject in all semesters along with overall CGPA will be issued by the University at respective exit point.

Certification of Awards

- Award of Certificate / Diploma / Advanced Diploma / B.Voc and other degrees as the case may be, would depend on acquisition of requisite credits and not on the duration of the calendar time.

- Each of the awards shall specify within parenthesis, the Skill(s) specialization, such as B. Voc. (Industrial Automation), B. Voc. (Automation) etc.

- The students will have the option to exit with a Certificate, Diploma or Advanced Diploma after acquiring requisite no of credits. In case of affiliated colleges, such students may be awarded Certificate, Diploma or Advanced Diploma, as the case may be by the concerned College after a written authorization by the affiliating University.

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (MS)
Uniform Pattern for Bachelor of Vocation (B.VOC) Program

Faculty of Science and Technology
Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
(W.E.F Academic Year **2022-23)**

SEMESTER - I							
Sr. No.	**Subject Code**	**Title of the Subject**	**Contact Hours Per Week**		**Evaluation Scheme (marks)**		**Credit**
			L	**P**	**CIA**	**SEE**	
General Academic Components							
1	BVXX-111	Functional English	4	0	20	80	4
2	BVXX-112	Specific Course on generic organizational practice	4	0	20	80	4
3	BVXX-113	Generic Skill Course	4	0	20	80	4
Skill Development Components							
4	BVXX-114	Skill Specific Course	4	0	20	80	4
5	BVXX-115	Skill Specific Course	4	0	20	80	4
6	BVXX-116	LAB: Skill Specific Course	0	6	25	25	3
7	BVXX-117	LAB: Skill Specific Course / Minor Project	0	6	25	25	3
8	BVXX-118	Skill Specific Course on Industrial/ Service Sector / Industrial Certification	4 Lectures/ 100 hrs. Industrial Certification		20	80	4
				Total	170	530	30

SEMESTER - II							
Sr. No.	Subject Code	Title of the Subject	Contact Hours Per Week		Evaluation Scheme (marks)		Credit
			L	P	CIA	SEE	
General Academic Components							
1	BVXX-121	Computer Skills	4	0	20	80	4
2	BVXX-122	Specific Course on generic organizational practice	4	0	20	80	4
3	BVXX-123	Generic Skill Course	4	0	20	80	4
Skill Development Components							
4	BVXX-124	Skill Specific Course	4	0	20	80	4
5	BVXX-125	Skill Specific Course	4	0	20	80	4
6	BVXX-126	LAB: Skill Specific Course	0	6	25	25	3
7	BVXX-127	LAB: Skill Specific Course / Minor Project	0	6	25	25	3
8	BVXX-128	Skill Specific Course on Industrial/ Service Sector / Industrial Certification	4 Lectures/ 100 hrs. Industrial Certification		20	80	4
				Total	170	530	30

SEMESTER - III							
Sr. No.	Subject Code	Title of the Subject	Contact Hours Per Week		Evaluation Scheme (marks)		Credit
			L	P	CIA	SEE	
General Academic Components							
1	BVXX-231	Energy and Environment	4	0	20	80	4
2	BVXX-232	Specific Course on generic organizational practice	4	0	20	80	4
3	BVXX-233	Generic Skill Course	4	0	20	80	4
Skill Development Components							
4	BVXX-234	Skill Specific Course	4	0	20	80	4
5	BVXX-235	Skill Specific Course	4	0	20	80	4
6	BVXX-236	LAB: Skill Specific Course	0	6	25	25	3
7	BVXX-237	LAB: Skill Specific Course / Minor Project	0	6	25	25	3
8	BVXX-238	Skill Specific Course on Industrial/ Service Sector / Industrial Certification	4 Lectures/ 100 hrs. Industrial Certification		20	80	4
				Total	170	530	30

SEMESTER - IV							
Sr. No.	Subject Code	Title of the Subject	Contact Hours Per Week		Evaluation Scheme (marks)		Credit
			L	P	CIA	SEE	
General Academic Components							
1	BVXX-241	Personality Development and Stress Management	4	0	20	80	4
2	BVXX-242	Specific Course on generic organizational practice	4	0	20	80	4
3	BVXX-243	Generic Skill Course	4	0	20	80	4
Skill Development Components							
4	BVXX-244	Skill Specific Course	4	0	20	80	4
5	BVXX-245	Skill Specific Course	4	0	20	80	4
6	BVXX-246	LAB: Skill Specific Course	0	6	25	25	3
7	BVXX-247	LAB: Skill Specific Course / Minor Project	0	6	25	25	3
8	BVXX-248	Skill Specific Course on Industrial/ Service Sector / Industrial Certification	4 Lectures/ 100 hrs. Industrial Certification		20	80	4
				Total	170	530	30

SEMESTER – V							
Sr. No.	Subject Code	Title of the Subject	Contact Hours Per Week		Evaluation Scheme (marks)		Credits
			L	P	CIA	SEE	
General Academic Components							
1	BVXX-351	Human Resource Management	4	0	20	80	4
2	BVXX-352	Specific Course on generic organizational practice	4	0	20	80	4
3	BVXX-353	Generic Skill Course Elective	4	0	20	80	4
Skill Development Components							
4	BVXX-354	Skill Specific Elective	4	0	20	80	4
5	BVXX-355	LAB: Skill Specific Course	0	8	25	25	4
6	BVXX-356	Off Campus Industrial/Institutional Training/Field Survey	#		50	125	6
7	BVXX-357	Major Project - I	0	6	50	50	3
8	BVXX-358	Seminar	0	2	25	00	1
Total					230	520	30

SEMESTER – VI							
Sr. No.	Subject Code	Title of the Subject	Contact Hours Per Week		Evaluation Scheme (marks)		Credits
			L	P	CIA	SEE	
General Academic Components							
1	BVXX-361	Entrepreneurship Development	4	0	20	80	4
2	BVXX-362	Specific Course on generic organizational practice	4	0	20	80	4
3	BVXX-363	Generic Skill Course Elective	4	0	20	80	4
Skill Development Components							
4	BVXX-364	Skill Specific Elective	4	0	20	80	4
5	BVXX-365	LAB: Skill Specific Course	0	8	25	25	4
6	BVXX-366	Off Campus Industrial/Institutional Training/Field Survey	#		20	80	4
7	BVXX-367	Major Project – II, Report and Seminar	0	12	100	100	6
Total					225	525	30

Note:

1. **Particular Subject Title**, run under the specific skill sector of B.VOC program, should replace the following common nomenclature mentioned in course structure –

- **Specific Course on generic organizational practice**

  Institute/College should offer basic/applied course that creates overall background for career in organization/industry/domain in specific skill sector

- **Generic Skill Course**

  Institute/College should offer fundamental/basic course that facilitates better understanding of skill specific course

- **Skill Specific Course**

  Institute/College should offer core course related to specific skill sector that may be fundamental or applied in nature

2. For subject codes BVXX117, BVXX 127, BVXX237, BVXX 247, BVXX357, BVXX367; the institute/college will have freedom to provide Skill Specific Lab / Minor Project on basis of infrastructure/facility available. Under Minor Project, students may undertake – skill specific field work/survey work/case studies/working model development/laboratory based short term projects/projects based on current or advanced domain in the specific skill sector.

3. Under Major Project – I (Subject Code BVXX357), students have to define a problem (that may be fundamental applied in nature, related to specific skill sector), finalize the title of project and hypothesis, conduct adequate literature survey and design adequate experimental plan according to hypothesis. A comprehensive report on aforesaid activities should be prepared and submitted to the institute/college for evaluation.

4. Under Major Project – II (Subject Code BVXX 367), students have to perform actual experiments/ conduct field work, analyze collected data and come up with final conclusion of entire work. A comprehensive report of the project should be submitted to the institute/college. Final evaluation will be done on the basis of report submitted and seminar on the complete project work.

5. Under Seminar Activity (Subject Code BVXX358) students should deliver seminar on topics covering advanced concepts/contemporary applied practices under skill specific sector.

6. # Under course codes BVXX-356 and BVXX-366 (Off Campus Industrial/Institutional Training/Field Survey) the student has to complete 240 hours of Industrial/Institutional Training. Students will be allowed to complete above 240 hours of training flexibly through six semesters. Cumulative performance of the students will be evaluated at the end of semester V and semester VI respectively, for the purpose of awarding final degree.

Glossary:

CIA: Continuous Internal Assessment

SEE: Semester End Examination

L: Theory Lecture

P: Practical/ Hands-on

VOC: Vocational

Interpretation of Course Code:

All courses will have nomenclature as '**BVXX- ABC**'

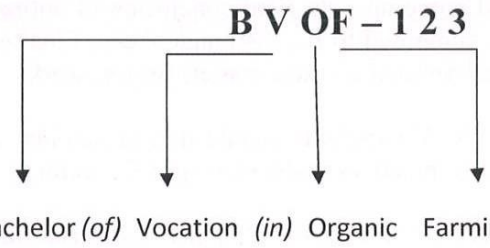
'XX' should be replaced by first two alphabets of specific skill trade (for example: Any course on Organic Farming should be denoted as BVOF followed by numeric denomination as given in Glossary)

A = Year (1/2/3)

B = Semester (1/2/3/4/5/6)

C = Incremental Number (1/2/3/4/5/6/7/8)

Example:



1 = First Year

2 = Second Semester

3 = Subject number 3