Parvatibai Chowgule College of Arts and Science (Autonomous)

DEPARTMENT OF COMPUTER SCIENCE

<u>BACHELOR OF VOCATION (B.VOC.)</u>
(To be introduced from the Academic Year 2021-2022)

The College shall adopt the ordinance OA-23 of Goa University with certain amendments. The Bachelor of Vocation (B.Voc.) Shall be governed under AO-6 of our College.

AO-6. ORDINANCE RELATING TO THE DEGREE IN BACHELOR OF VOCATION
> **(B.Voc.)**
> **(Effective from the Academic Year 2021-2022)**

AO-6.1. Introduction

The University Grants Commission (UGC) launched a scheme on Skill Development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Certificate/Diploma/Advanced Diploma under the National Skills Qualifications Framework (NSQF) in 2013. Subsequent to these changes have been made time to time in 2015 by the UGC and The Goa University in February, 2021.

The College has been successfully running B.Voc in Software Development from the Academic Year 2017-18.

The B.Voc. programme is focused on universities and colleges providing undergraduate studies, which would also incorporate specific job roles 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.

The curriculum has been planned in a way so as to provide judicious mix of skills relating to a profession and appropriate content of General Education. To ensure that the students have adequate knowledge and skills, so that they are work-equipped at each exit point of the Programme. To provide flexibility to the students by means of pre-defined entry and multiple exit points. To integrate National Skill Quality Framework (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. 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. Therefore, this programme also includes On the Job Training/Internships and Project work as part of its curriculum.

AO-6.2. OBJECTIVES

➢ To provide judicious mix of skills relating to a profession and appropriatecontent of General Education.

➢ To ensure that the students have adequate knowledge and skills, so that theyare ready to work at each exit point of the programme.

➢ To provide flexibility to the students by means of pre-defined entry andmultiple exit points.

➢ To integrate NSQF within the undergraduate level of higher education in orderto enhance employability of the graduates and meet industry requirements.

➢ Such graduates apart from meeting the needs of local and national industry arealso expected to be equipped to become part of the global workforce.

➢ To provide vertical mobility to students coming out of 10+2 with vocationalsubjects.

AO-6.3. NOMENCLATURE OF THE COURSE

The nomenclature of the course shall be Certificate/Diploma/Advanced Diploma/B.Voc Degree in Programmes (as decided from time to time) depending on the Exit level of the course. This is also indicated in section AO-6.4. The Programmes shall be in keeping with NSQF.

AO-6.4. DURATION AND NSQF LEVEL OF THE PROGRAMME

The duration of the Programme shall be as given in the table below:

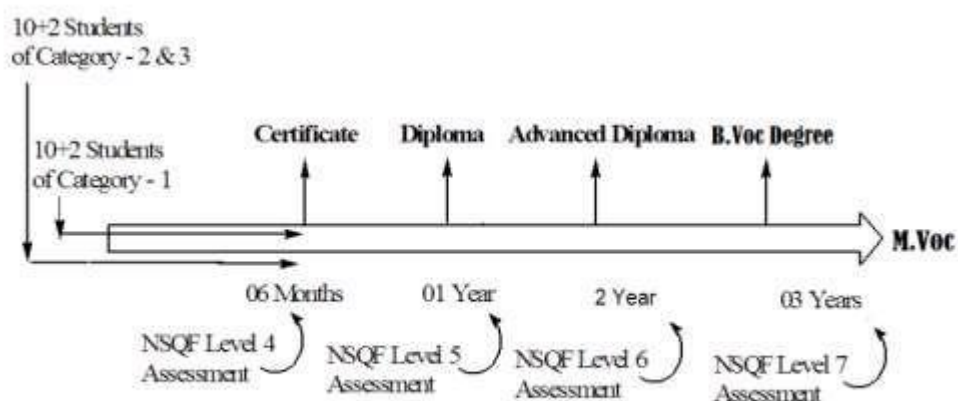| NOMENCLATURE	DURATION	NSQF LEVEL
Certificate	One Semester	Level 4
Diploma	Two Semesters	Level 5
Advanced Diploma	Four Semesters	Level 6
B. Voc Degree	Six Semesters	Level 7

AO-6.5. Eligibility

Fig. 1: Assessment of Skill Component under NSQF in Vocational Courses

AO-6.5.1 ELIGIBILITY FOR ADMISSION TO SEMESTER-I

Any candidate who has passed the HSSC or its equivalent, in any stream from Goa Board of Secondary and Higher Secondary Education or equivalent is eligible for admission to the First Semester.

AO-6.5.2: ELIGIBILITY FOR ADMISSION TO SEMESTER-II, III, IV, V AND VI

a) A student will be eligible to be admitted to each of the semester on completion of the previous semester.
b) A student will be allowed to undertake a Skill Course (SK) having a prerequisite only if he/she has attained at least the grade P in the specified prerequisite course/s.

AO-6.6. ADMISSION AND FEES

➢ The Admission will be as per Eligibility Criteria and College Policies.

➢ The Fee structure shall be as decided by the College, from time to time. The Course being self-financed all guidelines pertaining to it will have to be adhered to.

AO-6.7. PROGRAMME STRUCTURE

The B.Voc. Programme shall comprise credits for Skill-based Courses and General Education as per the following table:

NOMENCLATURE	DURATION	SKILL-BASED CREDITS	GENERAL EDUCATION CREDITS	TOTAL CREDITS
Certificate	One Semester	18	12	30
Diploma	Two Semesters	36	24	60
Advanced Diploma	Four Semesters	72	48	120
B.Voc.Degree	Six Semesters	108	72	180

The following Table shows the composition of General and Skill Components as per the NSQF Level:

NSQF LEVEL	SKILL COMPONENT CREDITS	GENERAL EDUCATION CREDITS	TOTAL CREDITS FOR AWARD	NORMAL DURATION	EXIT POINTS / AWARDS
4	18	12	30	One Sem.	Certificate
5	36	24	60	TwoSem.	Diploma
6	72	48	120	FourSem.	Advanced Diploma
7	108	72	180	Six Sem.	B.Voc Degree

One Credit shall be equivalent to 15 hours for theory, workshops/labs and tutorials, 30 hours for internship/field work and self-learning, based on e-content or such other.

AO-6.8. SCHEME OF EXAMINATION

AO-6.8.1. MODES OF EVALUATION
Courses conducted in the B.Voc Programme shall be assessed employing any one of the following options:

1) Continuous Assessment only;

2) Continuous Assessment and Semester End Assessment; and

3) Continuous assessment, Mid-semester assessment and Semester End Assessment.

The pattern of assessment can be based on alternative modes of evaluation. The pattern of assessment and modes of evaluation will be decided by the course instructor in consultation with the Department Faculty Council (DFC). The instructor will announce the pattern of assessment, the mode of evaluation and the time schedule of assessment right at the beginning of the semester. This disclosure will be a part of the course schedule. Courses with practical components will have separate heads of passing.

AO-6.8.2 PATTERN OF ASSESSMENT

Evaluation Scheme
1) The Skill component of the course will be assessed and certified by the respective Sector Skill Councils. In case, there is no Sector Skill Council for a specific trade, theassessment may be done by an allied Sector Council or the Industry partner. The certifying bodies may comply with and obtain accreditation from the National Accreditation Board for Certification Bodies (NABCB) set up under Quality Council of India (QCI). Wherever the College may deem fit, it may issue a joint certificate for the course(s) with the respective Sector Skill Council(s).

2) The credits for the skill component will be awarded in terms of NSQF level certification which will have 60% weightage of total credits of the course in followingmanner.

3) In case of any unavoidable circumstances, the College shall have the right to conduct and assess all the evaluations of the skill component on behalf of the Sector Skill Council with due intimation.

NAME OF THE COURSE	NSQF LEVEL CERTIFICATE	CUMULATIVE CREDITS
Certificate	Level - 4	18 credits
Diploma	Level – 5	36 credits
Advanced Diploma	Level - 6	72 credits
B.Voc. Degree	Level - 7	108 credits

AO-6.8.2.1. PATTERN OF ASSESSMENT FOR COURSES EMPLOYING CONTINUOUS ASSESSMENT ONLY (THEORY)

(a) The CA (Continuous Assessment) shall be conducted in a given Semester using alternate modes of evaluation such as assignment, seminar presentation, orals, demonstration, writtenetc.

(b) Minimum 3 different assessment modes are to be conducted for the course. However, theteacher may conduct more than mandatory 3 assessments.

AO-6.8.2.2. PATTERN OF ASSESSMENT FOR COURSES EMPLOYING CONTINUOUS ASSESSMENT AND SEMESTER END EXAMINATION (THEORY)

a) The CA (Continuous Assessment) shall be conducted in a given Semester using alternate modes of evaluation such as assignment, seminar presentation, orals, demonstration, written etc.

b) Minimum 3 different Assessments (including two CAs and one Semester End Examination (SEE)) are to be conducted for the course. However, the teacher may conduct more than mandatory 2 CAs. Two of the best performance of the students in such an instance is to be considered.

c) Semester End Examination (SEE) to be conducted covering the entire syllabus.

AO-6.8.2.3. PATTERN OF ASSESSMENT FOR COURSES EMPLOYING CONTINUOUS ASSESSMENT, MID SEMESTER ASSESSMENT (MIDTERM ASSESSMENT) AND END SEMESTER ASSESSMENT (TERM END EXAMINATION) (THEORY)

a) The CA (Continuous Assessment) shall be conducted in a given Semester using alternate modes of evaluation such as assignment, seminar presentation, orals, demonstration, written etc.

b) Minimum 3 different Assessments [including one CA, one Midterm Assessment (MA) and Term End Examination (TEE)] are to be conducted for the course. However, the teacher may conduct more than one mandatory CA.

c) Midterm Assessment to be conducted covering the 50% of the entire syllabus. Term End Examination to be conducted at the end of the semester covering the remaining 50% of the entire syllabus.

AO-6.8.3 SCHEME OF EVALUATION FOR COURSE (THEORY)

a) A student shall be required to score a minimum of 40% marks in the theory component, to obtain a minimum Grade P in the theory component.

b) For a course with practical component, a student is required to score a minimum of 40% marks in theory and practical component separately to obtain a minimum Grade P for the theory and practical components of the course.

c) In case the student has not obtained at least a Grade P in the theory component, marks scored by the student in the practical component of a course shall be carried forward if he/she has scored the minimum Grade P in that component.

d) A student unable to obtain a minimum Grade P in Skill courses (SK) after the retake examination will have to repeat the Skill course credits as and when it is next offered.

e) A student unable to obtain the minimum Grade P in General courses (GEC) after the retake examination will be eligible for repeat exam as per the college/class policy.

AO-6.8.4 SCHEME OF EVALUATION FOR COURSE (PRACTICAL)

(a) No separate examination(s) in laboratory exercises shall be conducted for courses having practical(s) component. Each experiment/laboratory work carried out by the student shall be assessed by the teacher/s during the regular practical. Marks shall be allotted for journal/lab record book, field work and oral/viva voce. The teacher concerned will decide the distribution of marks under different heads.

(b)   For assessing the candidate's performance in the assigned experiment, the examiner shall take into account the planning, the procedure and the technique followed by the candidate along with the readings/observations, the results and the presentation.

(c)   In oral examination, the examiner(s) shall assess the knowledge of the candidate in the course as well as the experiment(s) performed by the candidate.

(d)   Record of the marks obtained by the candidate shall be maintained by the respective department for Semesters I to VI, in a sealed envelope for a minimum period of 3 years.

(e)   The practical assessment shall be treated as an independent head of passing.

(f)   A candidate may be permitted, strictly on medical or other genuine grounds, to perform practical(s) missed, at the end the course.

(g)   A student unable to obtain a minimum Grade P in a practical component will be provided with a comprehensive repeat assessment as per the Course/Department policies and attendance policy.

AO-6.8.5. RETAKE EXAMINATION AND SUBMISSION OF RESULTS

(a)After completion of the regular entire course assessment in a semester, retake

examination will be conducted within 15 days for the following specified reasons with prior

approval from the concerned teacher:

- ➢ Students participating in various events like NSS/NCC/conferences etc
- ➢ Medical reasons such as hospitalization, etc with prior permission supported bythe medical certificate
- ➢ Unforeseen emergencies such as Accidents, medical, curfew, bad weather etc.
- ➢ Students who fulfill class policies and attendance policy but have acquired Grade R/Ab.

(b)Marks scored by students in the courses offered by the Department during the semester

should be submitted to Examination Cell of the College at least one week before the end of

the semester (commencement of the winter/ summer break) so asto facilitate the

declaration of results.

(c)Any issues related to conduct of examination should be addressed to Controller of

Examination.

AO-6.8.6 GENERAL GUIDELINES FOR PROJECT WORK

a) A student registered for the three years B.Voc. Degree programme shall be required to carry out a project in the subject during the Semesters-V and Semester-VI, and submit the Project Report at the end of Semester-VI for evaluation.

b) During the Semesters-V and Semester-VI, candidates of B.Voc. shall be assigned workfor completing the Project in the area/field of subject/s. Project work and the Report shall be based on field work/library work /laboratory work or on-the-job training or similar work assigned by the teacher on a topic identified by the latter.

c) Project work shall be assigned to a single student or to a group of up to 5 students. The teacher shall be assigned one or more such groups according to the requirement of thesubject. Two contact hours per week shall be considered as teaching work load for a group of 5 students in Semesters-V and Semester-VI.

AO-6.8.7 ASSESSMENT OF PROJECT WORK

a) The assessment of the project paper shall be done equally by Project Supervisor/Guide for 50 percent of marks and departmental Faculty Panel consisting of two or more departmental faculty members, other than the Project Supervisor/Guide, for 50 percent of marks. The Supervisor/Guide shall assess the project as per the guidelines defined in the project manual of the College. The student/s shall make a presentation of the work before the Faculty Panel and other students of the Department. The Faculty Panel shall assess the work for 50 percent marks and the average of marks awarded by members of the Faculty Panel shall be considered

b) The grade point of the project paper shall be based on the total marks scored from assessments by Project Supervisor and the Faculty Panel. A student shall earn allotted credits for the project paper on obtaining a minimum Grade P.

AO-6.8.8. INTERNSHIP TRAINING AND ON THE JOB TRAINING (OJT)

The candidate shall be required to obtain a certificate from the firm indicating that he/she has satisfactorily completed the required training and shall submit an Internship Report to the Guide/ Teacher In-charge, who shall be a faculty member.

a) CA shall be conducted by the internal faculty, and shall include an assessment of the Final Internship Report by the Guide/ Teacher In-charge, who shall be a faculty member.
b) SEE shall comprise an evaluation of the Report and a viva-voce.
c) The OJT falls under skill component which has to be assessed as per the guidelines set by the Sector Skill Council.

AO-6.8.9. PROCEDURE FOR PREPARING RESULTS

i. Marks, Grades and Grade Points:

Absolute grading method shall be adopted for awarding grades in a course. Under theabsolute grading, the marks are converted to grades based on pre-determined class intervals. To implement the grading method, a 10-point grading system shall be used.

ii. The following table gives the conversion of marks, grade points and letter grades to indicate the performance of the candidate in each course at the undergraduate level.

Range of percentage scored	Grade Points	Letter Grade	Grade Description
85 – 100	10	O	Outstanding
75 – < 85	9	A+	Excellent
65 – < 75	8	A	Very Good
55 – < 65	7	B+	Good
50 – < 55	6	B	Above Average
45 – < 50	5	C	Average
40 – < 45	4	P	Pass
0 – < 40	0	R	Reappear
Absent	0	Ab	Absent

iii. A student obtaining Grade R/Ab in a course shall be required to reappear for the examination in that course.

iv. Computation of SGPA and CGPA:

The following procedure shall be used to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

The performance of a student in a semester is indicated by a number called SGPA. 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 courses taken by a student and the sum of the number of credits of all the courses undergone by a student,

SGPA(Si)= Sum of the product of the number of credits with the grade points scored in a semester

Total number of credits in that semester

SGPA(Si) = Σ (Ci x Gi) / Σ Ci
where Ci is the number of credits of the ith course and Gi is the grade point scored by the student in the ith course in each semester. Here, i = 1,2,3……n, represent the number of courses in which a student is registered in the concerned semester.
The SGPA is rounded up to two decimal places.

Illustration of Computation of SGPA:

Course	Credit	Grade Letter	Grade Point	Credit Point = (Credit x Grade Point)
Course 1	4	A	8	4 x 8 = 32
Course 2	4	B+	7	4 x 7 = 28
Course 3	4	B	6	4 x 6 = 24
Course 4	4	A+	9	4 x 9 = 36
Course 5	4	B	6	4 x 6 = 24
	20			144

Thus, SGPA=144/20=7.2

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,

CGPA= Sum of the product of the total number of credits in a semester with its grade point average

Total number of credits in the entire programme

CGPA = $\Sigma(C_j \times S_j) / \Sigma C_j$
where S_j is the SGPA of the jth semester and C_j is the total number of credits in that semester.
j = 1,2,3……m, represent the number of Semesters of an entire programme for which the CGPA is to be calculated.
Percentage = CGPA x 10. The CGPA is rounded up to two decimal places

Illustration of Computation of CGPA:

Semester	Credit	SGPA	Credit x SGPA
Semester I	20	7.2	28 x 7.2 = 144
Semester II	20	6.8	32 x 6.8 = 136
Semester III	20	7.4	30 x 7.4 = 148
SemesterIV	20	6.6	30 x 6.6 = 132
Semester V	20	7.0	30 x 7.0 = 214
Semester VI	20	6.4	30 x 6.4 = 128
	120		828

Thus, CGPA=1241.2/180=6.89 (Grade: B+)

v. The Undergraduate Degree shall be awarded according to the following classification.

CGPA	Grade	Classification of Final Result
9.0-10	O	Outstanding
8.0-8.99	A+	Excellent
7.0-7.99	A	Very Good
6.0-6.99	B+	Good
5.5-5.99	B	Above average
4.5-5.49	C	Average
4.0-4.49	P	Pass

AO-6.8.10 AWARD OF DIPLOMA, ADVANCED DIPLOMA AND B.VOC. DEGREE

All such persons who have undergone the prescribed courses and have passed the qualifying examinations shall be awarded the Diploma/Advanced Diploma/B.Voc. Degree.

AO-6.8.11 AWARD OF ENTITLEMENT CREDIT POINTS FOR NATIONAL/INTERNATIONAL LEVEL PARTICIPATION IN N.C.C. /N.S.S. /SPORTS /CULTURAL EVENTS TO BE USED UNDER THE CHOICE BASED CREDIT SYSTEM (CBCS) FOR B.VOC. PROGRAMMES.

AO-6.8.11.1 SCHEME FOR AWARD OF ENTITLEMENT CREDIT POINTS:

A. A student shall be eligible for the credit points only once after her/his participation in a national/international N.C.C./N.S.S./Sports/Cultural event during her/his academic programme term and the credit points so allotted shall be added to her/his cumulative credit points used for the calculation of her/his C.G.P.A.

B. Credit points will be allotted as per the following:

CATEGORY	CREDIT POINTS
Participation in an International N.C.C./N.S.S./Sports/Cultural event	12
Participation in a National N.C.C./N.S.S./Sports/Cultural event	06