SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE

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PART- ONE

Thursday, the 22nd September, 2022

DIRECTION

No. : 56 /2022. Date : 22 /09/2022

Subject : Examinations leading to the Degree of Bachelor of Arts (वाङ्मय स्नातक) (Three Years – Six Semester Degree Course) under Choice Based Credit System Direction, 2022.

Whereas, Ordinance No. 146 & the Direction No. 47 of 2022 dated 15.09.2022 with respect to an examination leading to the Degree of Bachelor of Arts(वाङ्मय स्नातक) (Three Years – Six Semester Degree Course) under Credit Grading System(CGS), 2022 are in existence in the University,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(c) provides for Choice Based Credit System for all certificates, diplomas, Degrees, post-graduate programmes and other academic distinctions,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(v) for states that the Academic Council has to create policy, procedure and practice for Choice Based Credit System for all Academic programmes,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(y) provides the research projects are an integral part of Choice Based modules for post-graduate programmes,

AND

Whereas, while considering item No.32 of Academic Council dated 15/11/2018, Dr. A.B. Marathe, member of Academic Council proposed to implement Choice Based Credit System for first year from Academic Session 2018-2019 and progressively up to final year,

AND

Whereas, while considering the proposal of Dr. A.B. Marathe, the Academic council has constituted a Committee No. 01/2018,

AND

Whereas, while considering the recommendations of the Committee No 01/2018, Academic Council in its meeting dated 13/01/2020 vide Item No. 17 has constituted a Committee No. 02/2020 under the Chairmanship of Pro Vice-Chancellor,

AND

Whereas, the recommendations of Committee No.02/2020 had been placed before the meeting of the Academic Council dated 04/12/2020 vide Item No.72,

AND

Whereas, while considering the recommendations of the committee No.02/2020 vide Item No.72 along with the Scheme of Choice Based Credit System, Academic Council resolved to implement Choice Based Credit System from Academic Year 2021-2022,

AND

Whereas, it was necessary to frame the draft provisions of Direction/Ordinance for Choice Based Credit System, matter is placed before the Committee No.02/2020 and the same Committee No.02/2020 had constituted faculty wise Sub Committees under the Chairmanship of the respective Dean of the Faculty,

AND

Whereas, the Academic Council in its meeting dated 13/10/2021 vide Item No.12 has re-considered the above resolution regarding implementation of the Choice Based Credit System, and resolved to implement it from the Academic Session 2022-2023,

AND

Whereas, the recommendations of the Faculty wise sub committees were placed before the Committee No.02/2020 in its first online meeting dated 24/01/2022, and there after the series of meetings were held on 02/02/2022, 03/02/2022, 08/02/2022, 10/02/2022 and 12/02/2022,

AND

Whereas, above recommendations of Committee No.02/2020 pertaining to the programmes of Bachelor of Arts (कला स्नातक), were placed before the meeting of the Faculty of Humanities in its meeting dated 28/03/2022 and recommend to Academic Council,

AND

Whereas, the Academic Council while considering the recommendations of the Faculty of Humanities vide Item No.50 approved the Scheme of Teaching, Learning, examination and evaluation along with Provisions of Direction/Ordinance,

AND

Whereas, the respective Board of Studies under the Faculty of Humanities in its meeting dated 03/6/2022 and 04/06/2022 framed syllabi by taking into consideration the Scheme of Teaching, Learning, Examination and Evaluation along with Provisions of Direction/Ordinance of Choice Based Credit System,

AND

Whereas, the Draft syllabi framed by the various Board of Studies under the Faculty of Humanities were placed before the online emergent meeting of Faculty of Humanities dated 28/07/2022 and faculty accepted and recommended the draft syllabi to Academic Council,

AND

Whereas, the minutes of the Faculty of Humanities in its online emergent meeting dated 28/07/2022 along with draft syllabus were approved by Hon'ble Vice-Chancellor under section 12(7) of Maharashtra Public Universities Act, 2016 on behalf of Academic Council,

AND

Whereas making an Ordinance / Regulation is time consuming process.

Now, therefore I, Prof. Dr. Dileep N. Malkhede, Vice-Chancellor, Sant Gadge Baba Amravati University, Amravati in exercise of powers conferred upon me under Sub-section (8) of Section 12 of the Maharashtra Public Universities Act, 2016 do hereby direct as under-

1. i) This Direction may be called, "Examinations leading to the Degree of Bachelor of Arts (वाङ्मय स्नातक) (Three Years – Six Semester Degree Course) under Choice Based Credit System Direction, 2022.
   ii) The Degree of Bachelor of Arts - (वाङ्मय स्नातक)shall belong to the Faculty of Humanities.
2. This Direction shall come into force from the date of its issuance.
3. The provisions of directions, eligibility criteria and other details are as follows and the Scheme of Teaching, Learning, Examination and Evaluation of semester – I & semester-II is appended herewith vide **Annexure – A1 & A2.**

Common Provisions

4. In this Direction unless context otherwise requires –

Definitions:

Choice Based Credit System (CBCS) : Choice Based Credit System means the curricular system that offers multiple interdisciplinary choices for students to select from the courses (core elective or minor or soft skill coursers) to accumulate credits;

Any other word and expression used herein and not defined but defined in *pari materia* such as the Maharashtra Public Universities Act, 2016, Directions and UGC regulations shall have the same meaning as assigned to them in the said enactments.

5. As per the scheme of teaching, learning, examination and evaluation, theory/practical examinations of Semester-I, II, III, IV, V & VI shall be conducted by the University (except SEM, GOEC, Third Semester Environmental Science and ancillary Credit courses) at the end of each semester.

The theory/practical examinations of all the Semesters shall be held as per the following schedule :

Table No. 1

Sr.No.	Name of the Examination	Main Examination	Supplementary Examination
1	Semester-I , III & V	Winter	Summer
2	Semester-II, IV & VI	Summer	Winter

6. The practical examination of all semesters shall be conducted by the University as prescribed. Practical examination of all the Add-on courses of all semesters will be conducted by the College/Institution/University Department.

7. An applicant to an examination specified in Para 26 shall pursue a regular course of study in courses prescribed for the examination concerned for not less than one semester in a particular semester in a College/Institute/University Department.

Provided that the student shall be eligible to appear for examination if

a. he/she satisfies the conditions in the table of eligibility of admission and promotion to higher semester and the provisions there under.
b. he/she complies with the provisions of the Ordinance pertaining to the Examination in general from time to time.
c. he/she has prosecuted a regular course of study in a College Institute/University Department affiliated to the University.
d. he/she has in the opinion of the Principal/ Director/Head of Department shown satisfactory progress in his/her studies.

8. Without prejudice to the provisions of Ordinance No. 6 shall be applicable in *mutatis-mutandis* to every collegiate/non-collegiate student.
9. The fees for each theory examination and practical examination conducted by the University shall be as prescribed by the University, from time to time.

(A) Ability Enhancement Course (AEC) :

1) **Languages (Communication Skills) :** There shall be a compulsory course of Communication Skills in English and Second Language for all students in Semester I and II as specified in the scheme of Teaching Learning Evaluation and Examination of various programmes .

2) **Environment Studies :**There shall be a Compulsory course titled Environment Studies for Semester-III and Semester-IV for all the students.

- There shall be two periods /week for this subject. There will be internal evaluation on the basis of any one or more techniques such as survey report, visit report, assignments, seminar presentations, test, open book test etc. during third semester and student will earn 2 Credits as other credit courses (as shown in Table A) for studying this subject in third semester. The college/university department shall send the credits earned by the student before start of third semester examinations to the University. It will be reflected in 3rd semester credit grade report.
- The Examination of this subject shall be conducted at the end of IV Semester. There shall be a Theory examination of 70 marks and Project Report/ Internal Work/ Survey shall be of 30 marks. The total marks for this subject shall be 100. The students will earn 2 exam credits which will be reflected in fourth semester credit grade report.

(B) Skills Enhancement Module (SEM) :

There shall be skill enhancement module in each Course of DSC, DSE.

These skill modules shall have 20% weightage in the total curriculum of every theory subject/paper/course for every semester except GOEC, Environment Studies and ancillary credit courses. These skill modules shall be based on **Learning Outcome** of the course. These modules shall be used for continuous evaluation of the students. These modules will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion, Study tour, MCQ, Open Book examination (OBE), etc. Marks shall be sent in the format prescribed by the University from time to time.

(C)Generic Open Elective Course (GOEC) 1 & 2 :

There shall be a course as Generic Elective I & II for the semester I and II respectively.

There will be internal assessment examination of 50 marks each for this subject (I and II). There shall be two periods /week for this course for all the students. This course will be College Level Evaluation Course. The evaluation of this course shall be conducted by the college at the end of each semester and the marks, credits, grade shall be communicated to the University before the start of examination.

These courses shall be as designed by the University. These courses can also be additionally provided to the students by the College as per their distinctive specialized courses after approval from the University. Some proposed courses are as follows :-.

A) Gender Sensitization
B) Bharat Shodh
C) Communication Skill
D) Indian Constitution
E) Personality Development & Soft skill Components etc.
F) Library and Information Resources
G) Universal Human Values : Understanding Harmony
H) NCC Studies
I) Intellectual Property Rights (I.P.R.)
J) Disaster Management
K) Swachha Bharat Summer Internship Programme
L) Jeevan Koushalya Shikshan(जीवन कौशल्य शिक्षण)
M) Van, Mrud, Jal Saksharata, Vishayak Babi (वन, मृद, जल साक्षरताविषयक बाबी)
N) Bal Adhikar Sanrakshan (बाल अधिकार संरक्षण)
O) Hindi Bhasha Samvardhan (हिन्दी भाषा संवर्धन)
P) Case Study
Q) Artificial Intelligence
R) Block Chain

S) Bhartiya Nivadnuka Ani Matdar Jagruti Karyakram(भारतीय निवडणूका आणि मतदार जागृती कार्यक्रम)

T) Skill courses approved by Sector Skill Councils (SSC) &National Skill Development Council (NSDC) with due endorsement from the University

U) Specialized Generic (Open) Skill Courses (These courses may be designed by the College/Institute/ University Department considering the local needs. After approval from the University, these courses may be offered to the students.

Further, additional courses can be suggested by the respective Boards of Studies subject to the condition that GOEC should not be repeated from DSC, DSE & AEC.

10. **Ancillary Credit Courses :**

Induction Programme :- (Semester- I)

(A) Induction Programme shall be undertaken by the College/Institute/University Department and offered to students as prescribed by the University from time to time. This course shall be organised for I Year Semester-I Students only at the beginning of the semester. It shall be evaluated on basis of 1 credit for 30 hrs of Induction programme of one week. The Credit of the Induction Programme will be reflected in the Credit Grade Report of 1st Semester.

(B) **Internship/Apprenticeship/ Field Work/ Work Experience :- (S**emester- I to V)

There shall be Internship/Apprenticeship/ Field Work/ Work Experience during vacation for duration of 150 hours available to all the students, to be completed during Semester-I to V.

This will carry 5 Credits for learning of 150 hrs. It should be evaluated by mentor teacher / faculty member with the help of Work Report certified by trainer where Internship/Apprenticeship/ Field Work/ Work Experience is taken and as submitted by students. It shall be completed in vacation only. The tasks to be undertaken under this component are elaborated below and students may opt for any one of these categories. The Credits of Internship/Apprenticeship/ Field Work/ Work Experience shall be reflected in the Credit Grade Report of sixth Semester. The grade and credits obtained by the students should be communicated to the University by the College/Institution/Department before the start of University VI semester examination.

i)Internship/ Apprenticeship : Internship/ Apprenticeship preferably of 150 Hours in the Academic Institutes of National Importance or Research Laboratories or Institutes or Industries or companies or firms identified by the College/ Institute/University Department. The participation shall be duly certified by identified Internship / Apprenticeship provider which is to be verified by the Principal/Director/HOD/Mentor teacher / faculty member of the College/Institute/University Department.

ii) Field Work: Students can undertake fieldwork for duration preferably of 150 Hours related to their subject in a broad sense. This fieldwork shall be identified by the College/Institute/University Department and to be certified by the field work organizer and verified by Principal/Director/HOD/Mentor teacher/ faculty member of the College/Institute/University Department.

iii) Work Experience: Work experience for duration preferably of 150 Hours includes students participating in the regular work of any Firm/Company/Industry/Organization/ Institute/ Local Body identified by the College/Institute/University Department related to their learning subject and verified by Principal/Director/HOD/ the mentor / concerned teacher / faculty members of the College/Institute/University Department.

(C)**Open Elective Course (OEC) may be opted from Semester I to Semester V:**

There shall be Open Elective Course for the students. This will include the following types of courses. Students can select one or more of these courses. These courses shall be of Intra-disciplinary as well as Inter-disciplinary nature. Students can earn cumulatively maximum 5 Credits in this course.

i) General Interest Course (GIC) : General Interest Courses shall be from different programmes/disciplines and the curriculum of these courses shall be as prescribed by the University. This course will be evaluated by the concerned teacher / faculty member at the college level and the Credit shall be communicated to the University before the start of VI semester examination. If the concerned subject teacher / faculty member/ mentor / guide is from the College/Institute / other than the College / Institute / University Department where the student has taken admission to pursue regular course of study, then the credit earned by the student should be submitted by the teacher / faculty member / mentor / guide through the Principal of the parent institute. In such cases, the consent from the Principal of parent institute and the concerned teacher/ faculty member / mentor / guide should be obtained by the student before commencement of the course. The student may opt any course of any other discipline /faculty of his/her interest as GIC. The nature of these courses shall be self study under the guidance of concerned teacher/ mentor/ faculty member/guide.

ii) Skill Course: The students will be offered Skill Courses. The courses shall be designed by respective Boards of Studies or by concerned Sector Skill Council / National Skill Development Councils (NSDC).The Skill courses may be designed by the Colleges / Institutes/University Departments and after approval of the University it may be offered to the students. This course will be evaluated by the concerned teacher / faculty member at the College level and the credit shall be communicated to the University before the start of VI semester examination. For the skill courses opted from Sector Skill Council (SSC) or NSDC, the evaluation may be done by respective council & the credit shall be communicated to the University before the start of VI semester examination.

iii) MOOC : The students may opt MOOC courses identified by the teacher/mentor/faculty member and maximum 5 *credits* may be earned by the students after successful completion of these MOOC courses with a minimum 75 hours of course for on different online training platforms. The concerned teacher / faculty member shall act as a mentor and based on the students' performance in the course, the teacher/mentor/faculty member shall award Credits in accordance with the Marks/Grades given by SWAYAM etc. After mapping with University grading system (given separately with exam scheme), the College/Institution/ shall communicate them to the University before the start of VI semester examination. College/University Department can develop MOOC related to their concerned subject and after the approval of the University, these courses may be offered to the students. These courses shall be of Intra-disciplinary as well as Inter-disciplinary nature.

(D) Extracurricular and Co-curricular Activities : (In all Semesters)

The students may earn maximum cumulative 5 credits from the activities as given in Table No. 2, 3 & 4 after securing rank/ participation at College / University /State/ Zone/ National / International level events. These credits shall be transferred in option to Open Elective Course (OEC) so that these performers shall be given relaxation from undertaking this course. These credits can be earned during the entire degree course period but before the start of VI Semester examination. These credits will be reflected in the final semester Grade Report. The mentor/ concerned teacher/faculty member shall award the Credits to the student based on his/her performance and College / Institution/University Department shall communicate these to the University as given in Table No. 2, 3 and 4.

Table No. 2

Comprehensive Credit Distribution

S. N.	Activities	Credits at Levels						Grade point	Minimum passing grade
		College	University	State	Zone, if exist	National	International, if exist		
1	Unnat Bharat Abhiyan[UBA]	1	2	3	4	5	6	4	P
2	Sports activities (see table no. 3)	1	1 / 2	2 / 3	3 / 4	4 / 5	5 / 6	4	P
3	Cultural activities	1	2	3	4	5	6	4	P
4	N.S.S. activities Camps	1	2	3	4	5	6	4	P
5	Academic activities like review paper presentations, Aavishkar, start-up, Hackathon, Quiz competitions, other curricular, co-curricular activities, students exchange programme etc. Research Paper published/presented	1 --	2 1	3 2	4 -	5 4	6 6	**4**	**P**
6	**Participation in Summer school/ Winter School / Short term course** (not less than 30 hours 1 or 2 weeks duration) (not less than 60 hours 2 or 3 weeks duration) **Scientific Surveys, Societal Surveys** **Field Visits, Study tours, Industrial Visits,**	2 Credits 4 Credits 2 Credits 1 Credit						**4**	**P**
7	NCC activities	**As given in Table-4**							

Table No. 3

Credit Distribution for Sports

Sr. No.	Particulars of Sports Status (Individual/ Team)	Credits	Credit Point	Passing Grade
1	College Level Participation	1	4	P
2	University Level Participation	1	4	P
3	University Level Rank 1, 2, 3	2	4	P
4	State Level Participation	2	4	P
5	State Level Rank 1, 2, 3	3	4	P
6	Zonal Level Participation	3	4	P
7	Zonal Level Rank 1, 2, 3	4	4	P
8	National Level Participation	4	4	P
9	National Level Rank 1, 2, 3	5	4	P
10	International Level Participation	5	4	P
11	International Level 1,2,3	6	4	P

Table No. 4

Credit Distribution for NCC Activities

Sr. No.	Particulars of NCC Activities	Credits	Credit Point	Passing Grade
1	Participation in NCC activities	1	4	P
2	'B' Certificate obtained	2	4	P
3	'C' Certificate obtained	3	4	P
4	State Level Participation	4	4	P
5	National level Participation	5	4	P
6	International Level Participation	6	4	P

11. In the Scheme of Teaching, learning, Evaluation & Examination, credits are to be given with the maximum marks allotted to the Semester Examination in each paper for the theory and the practical of each of the Six Examinations. Also Computation of SGPA and CGPA, letter grades and grade point, equivalence of Class / Division to corresponding CGPA shall be indicated as given in Appendix - B.

12. The system of evaluation will be as follows:

    Theory papers, practicals and internal assessment will be evaluated in terms of marks. The marks will be added together and then converted into a grade and later a grade point average. Results will be declared for each semester and the final examination will give total grades and grade point average

13. The computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of an examinee of *under graduate course* shall be as given in Appendix B.
14. Provisions of Ordinance No.08/2001 in respect of an Ordinance to provide grace marks for passing in a Head of passing and Improvement of Division (Higher Class) and getting Distinction in the subject and condonation of deficiency of marks in a subject shall apply to the examination under this Direction.
15. An unsuccessful examinee at any of the above examination shall carry college assessment marks (Sessional Marks) of the theory/Practical examination to the successive attempt at the examination.

16. Provisions of Maharashtra Public Universities Act, 2016, Section 89 Chapter VIII, will be applicable for the declaration of the results of every examination and evaluation conducted by the University .
17. The names of the examinees passing the examination as a whole in the minimum prescribed period and obtaining the prescribed number of places in the CGPA shall be arranged in order of merit as provided in the examination in general Ordinance No. 6 provided that the merit list only be published in summer examination.
18. Subject to provisions in other ordinances, directions, no person shall be admitted to an examination under this Direction, if he / she has already passed the same examination of this University or an equivalent examination of any other University.

19. An examinee who has completed the term satisfactorily but fails to present himself/herself for the examination shall be eligible for readmission to the same examination, on payment of fresh fees and other fees as may be prescribed by the University from time to time.
20. A Student who could not complete a semester satisfactorily or did not keep term will be eligible for readmission to the same semester. However, readmission to the semester should be allowed only in regular session of that semester. In such case, the candidate will not be eligible to get admission in higher semester.
21. a) The student shall have to earn minimum 80% of total prescribed credits (to be eligible for award of the degree), from DSC/DSE courses, minimum 13 or 10% of total credits, (whichever is minimum) from Ancillary Credit Courses and balance credits from any of the university approved courses of the programme.

    b) A candidate/student who has successfully completed all requisite courses approved by the university and earned minimum prescribed total credits for which he/she is admitted for the under graduate degree programme and accumulated the required credits for the program and who has put in the minimum residence time prescribed for each semester of the program shall be eligible to receive the degree.
22. Examinations will be conducted in Offline mode in accordance with Ordinance No.9. However, under special circumstances and in specific cases, those can be conducted in Online mode on the recommendations of Board of Examination & Evaluation and approval by the Academic Council.
23. Generally and preferably College / Institute Internal Assessment examinations & University examinations papers should be set from the Question Bank prepared by the University.

24**. Power to Modify and Remove Difficulties :**

a.) Notwithstanding, anything contained in the foregoing, Hon'ble Vice-Chancellor in consultation with the Dean of the faculty shall have the power to issue directions or orders to remove any difficulty,
b.) Nothing in the foregoing may be construed as limiting the power of the University to amend**,** modify or repeal any all of the above.

25. **CBCS Working Committee :**

A) **University Level :**
There shall be a CBCS working committee in the University comprising of the following members :

1. Vice-Chancellor	-	Chairman
2. Pro-Vice Chancellor	-	Member
3. Deans of all faculties	-	Members
4. Two Experts not below the rank of Professors nominated by the Hon'ble Vice-Chancellor	-	Member
5. Concerned Head of the Department	-	Member
6. D. R. (Academic)	-	Member-Secretary

B) University Department Level :

There shall be a CBCS working committee in each university department comprising of the following members :

1) Head of the University Department	-	Chairman
2 One Teacher nominated by Hon'ble Vice-Chancellor	-	Member

C) College Level :

There shall be a CBCS working committee in each affiliated college comprising of the following members:

1) Principal	-	Chairman
2) HoDs of Teaching Departments of a College	-	Members
3) IQAC Co-ordinator	-	Member- Secretary

Powers and Duties of the CBCS working Committee :

1. Committee shall take review of the Implementation of the CBCS after completion of every Semester
2. The committee shall report to the university about difficulties faced during the implementation of the CBCS to the university.
3. The committee should also consider the grievances of the students regarding the difficulties/disadvantages put to them if any during their studies under CBCS.
4. For college level and university level, the committee will also be a grievance redressal committee for implementation of CBCS, respectively.
5. The committee may consider any other matter in the interest of the students as far as the CBCS is concerned.

Table-A Ancillary Credit courses Appendix-A

Sr. No	Course/Programs	Nature	ancillary	Organised by	Teaching Learning Training Period (Hours)	Evaluation Authority	Performance Evaluation Mode	Min. Passing Grade/Rank	Exam or Non-exam	Credit/s Earned
1	**Induction Program**	Man-datory	I	College/ Institute/ Department	30	College/ Institute/ Department	Evaluation participation		**Non-exam**	1
2	**Internship / Apprenticeship /Field work/ Work Experience**	Man-datory	II to V	Organi-sation/ Industry/ College/ Institute	150	Organi-sation/ Industry/ College/ Institute	Score-sheet of Performance		**Non-exam**	5
3	**Environmental studies semester**	Man-datory	**III**	College	**30**	College	Survey , Project report, Test etc.	**-**	**Non-exam**	**2**
4	**Open Elective Course GIC/Skill/ MOOC**	optional	V	Online/Offline Mode/SWAYAM/SSC/NSDC /college/institute	75	SWAYAM/ NPTEL/ College/ Institute/ SSC/NSDC	Certification from concerned Authority	P	**Exam or Non Exam**	5
5	**Co-curricular / Extra-curricular Activities**	optional	I to VI	As per Table 2, 3&4	Adequate as per activity	Organized as per level of activity	As per Para 8(D) Table2, 3 and 4	Not applicable	**Non-exam**	5

Notes :- 1) 13 or 10% of total credits prescribed for the award of the degree of the programme (whichever is minimum) are mandatory to be earned by all the students from Ancillary Credit Courses as mentioned in Table A

2) Record of student's Performance cum Evaluation (containing attendance, concept knowledge, intellectual/ decision making ability, handling skill, sense of responsibility, cooperative/leadership quality, presentation/demonstration) related to Internship /Apprenticeship/Field work/Work Experience shall be maintained by the College/Institute/University Department

3)For allotment of Internship /Apprenticeship/Field Work/Work Experience, the College/ Institute/University Department shall follow standard operating procedures (SOP) with concerned College/Institute/University Department/Organization/ Industry on the basis of Memorandum Of Understanding (MOU) /Letter of Intent and Joining letter. Further, for validation, progress records, Evaluation Sheet etc. shall be maintained by the College/Institute/University Department.

4) College/ Institute/University Department shall submit credit report for Ancillary Credit Courses as per Table A to the University.

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Appendix- B

COMPUTATION OF SGPA AND CGPA AND AWARD OF DEGREE

1) Marks of each paper/subject shall be converted into grades as given in the Table No. 5.

Grades and Grade Points

TABLE-5

Grade	Description	Range of Marks obtained out of 100 or equivalent fraction	Grade point
O	Outstanding	90-100	10
A+	Excellent	80-89	9
A	Very Good	70-79	8
B+	Good	60-69	7
B	Above average	55-59	6
C	Average	50-54	5
P	Pass	40-49	4
F	Fail	Below 40	0
Ab	Absent	Ab	0

A student obtaining Grade F or Ab shall be considered failed and will be required to reappear in the examination.

2) Based on the grade points obtained in each course /Subject/Paper Semester Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) are computed as follows :

i) Computation of SGPA:

Semester Grade Point Average (SGPA) is the weight age average of point obtained by a student in a semester and computed as follows.

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

Where Ci denotes the number of credits of the i^{th} course and G_i denotes the grade points scored by a student in the i^{th} Course.

ii) Computation of CGPA :

The CGPA is computed as follows

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

Where Si denotes the SGPA of the i^{th} Semester and C_i denotes 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.

3) **Equivalence of the conventional division/class to the corresponding C.G.P.A. in final semester is in accordance with the following table**

Equivalence of Class/Division to C.G.P.A.

Sr. No.	C.G.P.A.	Class/Division
1.	7.5 or more than 7.5	First Class with Distinction
2.	6.00 or more but less than or equal to 7.49	First Class
3.	5.50 or more but less than or equal to 5.99	Higher Second Class
4.	5.00 or more but less than or equal to 5.49	Second Class
5.	4.00 or more but less than or equal to 4.99	Pass

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Appendix -C

GUIDELINES TO PAPER SETTERS

1. Medium of Instructions and for examination shall be as prescribed by the BOS.
2. For the internal assessment & University end semester theory examinations, the paper should be set preferably from the question bank prepared by the university.

The question should be based on bloom's Taxonomy levels of (a) Remembering (b) Understanding (c) Application (d) Analysis.

Remember :

Skill Demonstrated	Question Ques / Verbs for tests
• Ability to recall of information like, facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria ability to recall methodology and procedures, abstractions, principles and theories in the field • Knowledge of dates, events, places. • Mastery of subject matter •	List, define, describe, state, recite, recall, identify, show, label, tabulate, quote, name, who, when where, etc.

Understand: -

Skill Demonstrated	Question Ques / Verbs for test
• Understanding information grasp • meaning • translate knowledge into new context • interpret facts, compare, contrast order, • group, infer causes predict consequences •	Describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss.

Apply: -

Skill Demonstrated	Question Ques / Verbs for test
•• Use information use methods, concepts, laws, theories in new • situations solve problems using required skills of knowledge • Demonstrating correct usage of method or procedure	Calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify.

Analysis: -

Skill Demonstrated	Question Ques / Verbs for test
• break down a complex problem into parts. Identify the relationships and interaction • between the different parts of complex problem.	Classify, outline, break down, categorize, analyse, diagram, illustrate, infer, select.

Evaluation (Judging)Analysis: -

Skill Demonstrated	Question Ques / Verbs for test
Evaluation questions encourage students to develop opinions and make value decisions about issues based on specific criteria	. Assess, Critique, Determine, Evaluate, Judge, Justify, Measure & Recommend **Examples of questions:** • "How could you select...?" • "How could you prove...?" • "How would you prioritize...?" • "What information would you use to support...?"

Synthesis (Creating)

Skill Demonstrated	Question Ques / Verbs for test
These questions encourage students create something new by using a combination of ideas from different sources to form a new whole	. Arrange, Combine, Create, Design, Develop Formulate, Integrate & Organize **Examples of questions:** • "What could be changed to improve...?" • "How would you test...?" • "What way would you design...?" • "What outcome would you predict for...?"

The Weightage of marks should be given preferably in the range of :

(a)	Remembering	10 to 20%
(b)	Understanding	30 to 45%
(c)	Application	30 to 45%
(d)	Analysis	10 to 20%
(e)	Evaluation (Judging)	10 to 15%
(f)	Synthesis (Creating)	10 to 15%
		100 to 160%

Types of Questions:

a) Multiple Choice Question (M.C.Q.) as an when applicable:

i) **Relevant content:** The question should be based on the relevant and important content.

ii) **Application of knowledge, not only theory:** The question tests the application of knowledge, does not only test how the candidate recalls isolated theoretical facts.

iii) **Focused questions and homogeneous answers:** The question focuses on one relevant aspect of the topic, all proposed answers belong to the same content dimension (i.e., diagnosis, or causes, or managements decisions etc.)

iv) **Clear and unambiguous answer:** The best answer clearly stands out. Avoid "correct" answers with existing controversial doctrines.

v) **Appropriate level of difficulty (50% -90% correct answers):**

Too difficult - even the best candidates need to guess
Too easy - weak candidates get a "present"

vi) **Unambiguous, concise and simple phrasing:** Avoid trick questions, double negatives.

Use only common abbreviations, short sentences etc.
Avoid imprecise qualifications (often, usually etc

i. **Avoid clues:**

Clues can help candidates guess the correct answer. Examples are:

- One answer is much more detailed than the others
- Only one answer follows grammatically from the stem •Non logical order of the answers

General Strategies :

- **Test comprehension and critical thinking, not just recall :**
  Ask MCQ so as to interpret facts, evaluate situations, explain cause and effect, make inferences, and predict results.
- **Use simple sentence structure and precise wording :**
  Write test questions in a simple structure that is easy to understand. And try to be as accurate as possible in your word choices. Words can have many meanings depending on colloquial usage and context.
- **Use familiar language :**
  The question should use the same terminology that was used in the course. Avoid using unfamiliar expressions or foreign language terms, unless measuring knowledge of such language is one of the goals of the question. Students are likely to dismiss distracters with unfamiliar terms as incorrect.
- **Place most of the words in the question stem :**
  While using a question stem, rather than an entire question, ensure that most of the words are in the stem. This way, the answer options can be short, making them less confusing and more legible.
- **Avoid giving verbal association clues from the stem in the key :**
  If the key uses words that are very similar to words found in the stem, students are more likely to pick it as the correct answer.
- **Avoid Trick Questions :**
  Questions should be designed so that students who know the material can find the correct answer. Questions designed to lead students to an incorrect answer, through misleading phrasing or by emphasizing an otherwise unimportant detail of the solution, violate this principle.
- **Avoid Negative Wording :**
  Students often fail to observe negative wording and it can confuse them. As a result, students who are familiar with the material often make mistakes on negatively worded questions. In general, avoid having any negatives in the stem or the options. In the rare cases where you use negatives be sure to emphasize the key words by putting them in upper case, and bolding or underlining them.
- **Avoid Double Negatives :**
  Don't use combinations of the words like not, no, nor, the -un prefix, etc in the same question.
- **Make the choices grammatically consistent with the stem :**
  Read the stem and each of the choices aloud to make sure that they are grammatically correct.
- **As far as possible, keep all answer choices of the same length :**
  This can be difficult to achieve, but expert test-takers can use answer length as a hint to the correct answer. Often the longest answer is the correct one. When one can't get all four answers to the same length, two short and two long can be used.
- **Place the choices in some meaningful order :**
  When possible, place the choices in numerical, chronological or conceptual order. A better structured question is easier to read and respond.

- **Randomly distribute the correct response :**
  The exam should have roughly the same number of correct answers that are a's, b's, c's and d's (assuming there are four choices per question).

- **Avoid using "all of the above"**
  If "all of the above " is an option and students know two of the options are correct, the answer must be "all of the above". If they know one is incorrect, the answer must not be "all of the above". A student may also read the first option, determine that it is correct, and be misled into choosing it without reading all of the options.

- **Avoid using "none of the above"**
  The option "none of the above" does not test whether the student knows the correct answer, but only that he/she knows the distracters aren't correct.

- **Refrain from using words such as always, never, all, or none :**
  Most students know that few things are universally true or false, so distracters with these words in them can often be easily dismissed.

- **Avoid overlapping choices :**
  Make the alternatives mutually exclusive. It should never be the case that if one of the distracters is true, another distractor must be true as well.

- **Avoid questions of the form "Which of the following statements is correct?"**
  There is no clear question being asked, and the choices are often heterogeneous. Such questions are better presented in the form of True/ False questions.

- **Instruct students to select the "best answer" rather than the "correct answer"**
  By doing this, you acknowledge the fact that the distracters may have an element of truth to them and discourage arguments from students who may argue that their answer is correct as well.

Designing Stems :

- **Express the full problem in the stem.**
  When creating the item, ask yourself if the students would be able to answer the question without looking at the options. This makes the purpose of the question clear.

- **Put all relevant material in the stem.**
  Do not repeat in each of the alternatives information that can be included in the stem. This makes options easier to read and understand, and makes it easier for students to answer the question quickly.
- **Eliminate excessive wording and irrelevant information from the stem.**
  Irrelevant information in the stem confuses students and leads them to waste time.

Designing Alternatives :

- **Limit the number of alternatives.**
  Use between three and five alternatives per question. Research shows that three choice items are about as effective as four or five-choice items, mainly because it is difficult to come up with plausible distracters.
- **Make sure there is only one best answer.**
  Avoid having two or more options that are correct, but where one is "more" correct than the others. The distracters should be incorrect answers to the question posed in the stem.
- **Make the distracters appealing and plausible.**
  All of the wrong answer choices should be completely reasonable. If the distracters are farfetched, students will too easily locate the correct answer, even if they have little knowledge. When testing for recognition of key terms and ideas keep the distractors similar in length and type of language as the correct solution. When testing conceptual understanding, distractors should represent common mistakes made by students.

b) Short Answer (SA) descriptive ……Marks as Applicable)

A short answer question as the term indicate is one to which a brief answer can be given. When the students are required to give a brief and precisely defined response, the suitable type is the restricted response questions. The specific form of the answer should also be indicated, e.g., List, Define, Give reason etc.

While framing a question requiring short answer it should be ensured that:

1. The statement constituting the question is simple, clear and unambiguous.
2. The scope of the answer is limited.
3. The direction given in the question is clear.
4. The question constitutes a valid testing situation for the ability under consideration
5. The question is likely to be interpreted in the same way by teachers/ students/ examiners.
6. The question does not require further restructuring.

c) Long Answers (LA) ……Marks as applicable)

Long Answer (LA) :

As the term indicates a long answer question is the one that needs a comprehensive explanation incorporating different ideas. The question should require the student to organize his ideas, choose the form of his answer and answer in his own words.

While framing a question requiring a long answer it should be ensured that:

1. The situation presented in the question is not new to most of the students.
2. The student will not be able to produce in the full, memorized answer.
3. The question involves the use of judgment on the part of student.
4. The answer can be completed within the limited time given.
5. The length and the scope of the answer is specified.

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Appendix- D

Instruction to the BOS

Curriculum / syllabus shall be modified/prepare for the courses/subjects prescribed as in CBCS direction.

The Programme Educational Objectives (PEOs), Program Outcomes (POs), Programme Specific Outcomes (PSOs) should be well defined.

For each course of the Program, learning objectives and learning outcomes: Course Outcomes (COs) should be defined carefully in accordance with Bloom's Taxonomy.

A comprehensive note on employability potential of the program should be added separately at the Preface/Preamble of the Program Curriculum

Bloom's hierarchy takes students through a process of synthesizing information that allows them to think critically. Students start with a piece of information and are motivated to ask questions and seek out answers.

Not only does Bloom's Taxonomy help teachers understand the process of learning, but it also provides more concrete guidance on how to create effective learning objectives.

Table No. 6. Bloom's Taxonomy

Bloom's Level	Key Verbs (keywords)	Example Learning Objective
Create	design, formulate, build, invent, create, compose, generate, derive, modify, develop.	By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.
Evaluate	choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate.	By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.
Analyze	classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, associate.	By the end of this lesson, the student will be able to differentiate between potential and kinetic energy.

Bloom's Level	Key Verbs (keywords)	Example Learning Objective
Apply	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present.	By the end of this lesson, the student will be able to calculate the kinetic energy of a projectile.
Understand	describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss.	By the end of this lesson, the student will be able to describe Newton's three laws of motion to in her/his own words
Remember	list, recite, outline, define, name, match, quote, recall, identify, label, recognize.	By the end of this lesson, the student will be able to recite Newton's three laws of motion.

This also reminds teachers that learning is an active process, stressing the importance of including measurable verbs in the objectives. And the clear structure of the taxonomy itself emphasizes the importance of keeping learning objectives clear and concise as opposed to vague and abstract.

OBE (Outcome Based Education) starts with a clear statement on what Knowledge, Skills and Attitudes, the Student will be able to demonstrate as having acquired on successful completion of a program of study. These should be clearly measurable.

Program Educational Objectives (PEOs):

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

GRADUATE ATTRIBUTES

Knowledge :Graduates have comprehensive knowledge and understanding of their subject area, the ability to engage with different traditions of thought, and the ability to apply their knowledge in practice including in multi-disciplinary or multi-professional contexts.

Critical and Analytical Thinking :Graduates are effective problems-solvers, able to apply critical, creative and evidence-based thinking to conceive innovative responses to future challenges.

Communication : Graduates convey ideas and information effectively to a range of audiences for a variety of purposes and contribute in a positive and collaborative manner to achieving common goals.

Team Work, Leadership : Graduates engage in professional behaviour and have the potential to be entrepreneurial and take leadership roles in their chosen occupations or careers and communities.

Ethics : Graduates are responsible and effective global citizens whose personal values and practices are consistent with their roles as responsible members of society.

Digital Competencies :Graduates are well prepared for living, learning and working in a digital society.

Life Long Learning: Graduates are self-aware and reflective; they are flexible and resilient and have the capacity to accept and give constructive feedback; they act with integrity and take responsibility for their actions.

Program Outcomes (POs):

Program outcomes: Describe what students are expected to know and would be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program.

Program outcomes basically describe knowledge, skills and behavior of students as they progress through the program as well as by the time of graduation and must reflect all GAs (Graduate Attributes).

Program Specific Outcomes (PSOs):

Program Specific Outcomes are statements that describe what the graduates of a specific program should be able to do.

Course Outcomes (COs):

Statements indicating what a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course there may be 5 or 6 COs. The keywords used to define COs are based on Bloom's Taxonomy.

Typically 4-6 CO s should be identified /Course. COs are major domain specific outcomes written using action verbs which are specific, measurable and can be demonstrated by students on completion of the course. Course Outcomes should aim to develop higher order skills in each Domain of Learning. Evaluation, Synthesis, Analysis are typical examples in Cognitive Domain. Outcomes which can be mastered in a significantly lower no. of lessons are likely to be too trivial and more suitable for Unit or Module Outcomes. Attainment of each CO should lead to attainment of one or more PO s.

For the internal assessment & University end semester theory examinations, the paper should be set preferably from question bank. Hence question bank should be prepared.

Also Board of Studies shall prepare a question bank of MCQs from units of all subjects.

Curriculum/syllabus of concerned Generic Open Elective Courses (GOECs), General Interest Courses (GICs), skill courses and Modules shall be prepared by the respective BOS as prescribed in CBCS scheme.

Each BOS shall design SEM for each offered course/subject/paper except for GOEC and Environmental Science.

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APPENDIX -E

Glossary of Terms

A. **Academic Year :** Academic year means academic activities of the University in a year (odd semester followed by even semester) as notified in the Academic Calendar.

B. **Semester :**It is a period of study comprising of 15 to 18 weeks of academic work equivalent to normally 90 teaching days. The odd semester may be scheduled from July to December and even semester from January to June.

C. **Programme / Programme of study** : Programme / Programme of study means a higher education programme pursued for a degree specified by the UGC under Section 22 (3) of the UGC Act;

D. **Course/Subject/Paper :** Course means one of the specified units which go to comprise a programme of study. It is referred to, as a 'paper' or 'subject' which is a component of a programme. All courses need not carry the same weight. A course may include but may not be limited to lectures / tutorials / laboratory work / field work /internship/ outreach activities / project work / vocational training / viva / seminars / term papers / assignments / presentations / dissertation/self-study etc. or a combination of these. Courses in a programme may include Core, Elective and Foundation.

i) **Ability Enhancement Courses (AEC) :** The Ability Enhancement Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). "AECC" courses are the courses based upon the content that leads to Knowledge enhancement. "SEC" courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

a. Communication Skills : Abilities used when giving and receiving different kinds of information. It involves verbal, non verbal, written, visual, listening, empathizing etc. and other means of expression.

b. Environmental Studies : Deals with every issue that affects an organism. It is essentially a multi-disciplinary approach that brings about an appreciation of our natural world and human impacts on its integrity. It is an applied science as it seeks practical answers to making human civilization sustainable on the earth's finite resources. Its components include Biology, Geology, Chemistry, Physics, Engineering, Sociology, Health, Anthropology, Economics, Statistics, Computers and Philosophy.

ii) **Discipline Specific Core (DSC) Course:** There may be a Core Course in every semester. This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

iii) **Elective Course:** A course which can be chosen from pool of courses / papers and which may be very specific or specialized or advanced or supportive to the discipline / subject of study or which provides an extended scope or which enables an exposure to some other discipline / subject / domain or nurtures the students proficiency / skill is called an elective course.

An elective may be "Generic Elective" focusing on those courses which add generic proficiency to the students. An elective may be "Discipline centric" or may be chosen from an unrelated discipline. It may be called an "Open Elective."

iv) **Discipline Specific Elective (DSE) Course:** Elective courses offered under the main discipline/subject of study is referred to as Discipline Specific Elective. The College/University Department/Institute may also offer discipline related Elective courses of Inter-disciplinary nature (to be offered by main discipline/subject of study). It is the specialized / emerging study area allied to the core subject.

v) **Generic Elective Course (GEC) :** An elective course chosen from an unrelated discipline/subject, with an intention to seek exposure beyond discipline/s of choice is called a Generic Elective. The purpose of this category of courses is to offer the students the option to explore disciplines of interest beyond the choices they make in Core and Discipline Specific Elective papers.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

vi) **Open Elective Course (OEC)** : The group of different choice based courses comprising of general interest courses related to discipline specific core (DSC) subjects or of interdisciplinary nature, MOOCs offered by different authorized agencies, open skill courses.

vii) **Generic Open Elective course (GOEC) :**The group of different important choice based courses (may be of interdisciplinary nature) related to the fundamental growth of students as a responsible citizen of India.

viii) **General Interest Course (GIC) :**General interest course is a course taken out of interest rather than for academic reasons. It may be chosen from different subjects / courses from the discipline or inter-discipline and the curriculum of these courses shall be designed by respective College/Institute/University Department and approved by the respective BOS. The nature of these courses shall be of self-study nature under the guidance of teacher / mentor / faculty member concerned. The evaluation of these courses shall be done by teacher / mentor / faculty member concerned (may be in the form of assignment / written test / project etc.) and marks and grades shall be communicated to the University.

ix) **MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and following the four quadrant approach consisting of video, text, self assessment and learn more.

x) **Skill Enhancement Course (SEC) :**This course may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge and should contain both theory and lab/hands-on training/field work to increase employability of the students.

xi) **Project:** A course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a student studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project.

xii) **Research Project/Dissertation:** A course designed to acquire special / advanced knowledge/Research with an advisory support / guidance by a teacher / faculty member.

xiii) **Foundation Course:** The Foundation Courses may be of two kinds: Compulsory Foundation and Elective foundation. "Compulsory Foundation" courses are the courses based upon the content that leads to Knowledge enhancement. Elective Foundation courses are value-based and are aimed at man-making education.

xiv) **Skill Enhancement Module (SEM) :** The module is based on the application of the subjects Discipline Specific Core (DSC), Discipline Specific Elective (DSE), communication skills in English subjects to provide skills to the students for developing their employment / self-employment / entrepreneurship capabilities.

E. **Examinational Credits:** Examinational Credits allows a student to receive credit for learning by demonstrating mastery of course outcomes skills and knowledge by taking the course exam(s). Some examinations may require performance of a skill set, while other examinations may be written tests covering course content.

F. **Ancillary Credits :** credits earned by the students by participating in Sports / Extra-curricular Activities / Unnat Bharat Abhiyan / Internship / Field work / Work experience / Avishkar / Induction programme / NSS / NCC/ Cultural Activities / Inter University Academic Activities and other activities prescribed by the University from time to time but other than core or elective courses.

G. **Internship / Field Work / Work Experience :** The prescribed hours of practical / on field training related to any Discipline Specific Core (DSC)course with any Institute / Firm / Industry / Establishment as identified by College/Institute/University Department.

H. **Induction Programme:** A programme of prescribed duration specially designed for the first year / first semester students to make the students feel comfortable in their new environment, set a healthy daily routine, create bonding in the batch as well as between faculty members, develop awareness, sensitivity, self-exploration and understanding of society at large, and nature also to inculcate in them ethos and culture of the College/Institute/University Department.

I. **Activity:**

i) **Curricular Activity :** Activities relating to the subjects comprising a course of study in the College/Institution/University Departments.

ii) **Co-curricular Activity :**Co-curricular refers to activities, programs and learning experience that complement in some way, what students are learning in College/Institution/University Departments. These activities are connected to the academic curriculum like Extension Activities, Debates, Quiz competition, seminars etc.

iii)**Extra-curricular Activity :** Extra-curricular takes place in addition/outside to regular curriculum including but not limited to Sports, Start-up, Hackathon, Avishkar, Students Exchange Program, Social Activities, Volunteering, NSS, NCC, Annual Gatherings, TRDEA (Teaching, Research, Development and Extension Activities etc.)

J. **Faculty member:** Faculty member means an individual qualified as per statutory Regulations, working on Full Time basis in an Institution/ University Department/College.

K. **Teacher :** Teacher means full time approved Professor, Associate Professor, Assistant Professor, Reader, Lecturer, Librarian, Principal, Director of institution, Director of Knowledge Resource Centre, Director of Centre of Lifelong Learning and Extension, Deputy and Assistant Librarian, in the University, College Librarian, Director or Instructor of physical Education in any University Department, Conducted, Affiliated, or Autonomous College, Autonomous Institutions or Department or Recognized Institutions of the University**.**

L. **Student:** Student means an individual who is admitted and registered for an academic programme of the University or affiliated, Conducted, Autonomous Colleges, Recognized Institutions and Departments of the University.

M. **Inter-disciplinary Studies:** Inter-disciplinary studies mean the combined academic studies and research in different disciplines as prescribed.

N. **Multi-disciplinary Studies:** Multi-disciplinary studies mean the combined academic studies and research in different streams of a particular discipline as prescribed.

O. **Level:** Level means Diploma, Post Diploma Certificate, Under Graduate Degree, Post Graduate Diploma and Post Graduate Degree Programmes.

P. **Laboratory Work (Lab):** The skill course based on the practical related to any or more Discipline Specific Core (DSC) course / Discipline Specific Elective (DSE) course as prescribed in Teaching-Learning schemes.

Q. **MCQs:** Multiple Choice Questions based on any / all units of a particular course of the programme.

R. **Online Learning (OL)**: Online Learning mode means a mode of providing flexible learning opportunities by overcoming separation of teacher and learner using a variety of media, including print, electronic, MOOCs in a totally online mode.

S. **MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and following the four quadrant approach consisting of video, text, self assessment and learn more.

T. **SWAYAM:** SWAYAM is the indigenous platform of the MHRD, GOI providing an integrated portal and platform for hosting Massive Open Online Courses (MOOCS) developed under the aegis of NME-ICT. Government of India adopted the MOOCs concept to supplement the formal education system in the country from high school to higher education, named aptly as the "Study Webs of Active-Learning for Young Aspiring Minds" (SWAYAM). It hosts various courses based on curriculum, continuing education and skill.

U. **Credit :**Credit means the standard methodology of calculating one hour of theory, one hour of tutorial, two hours of laboratory work / practical work / field work per week for a duration of a semester resulting in the award of one credit which is awarded by College/Institute/University Department. Credit for internship shall be one credit per week of internship, subject to a maximum of six credits.

V. **Letter Grade:** It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P, F and Ab.

W. **Grade Point:** It is a numerical weight allotted to each letter grade on a 10-point scale.

X. **Credit Point:** it is the product of grade point and number of credits for a course.

Y. **Credit Grade Report:** It is a report showing cumulative performance of a student in a given semester of the academic program. It shall display maximum, minimum and total marks of a course as per the scheme of teaching, learning and examination, evaluation as well as it will show the obtained : marks, credits, grade points, letter grade, SGPA, CGPA, percentage of total marks, class/division, incentive marks, remarks, result, exemptions and also other requisite information as prescribed.

Z. **Semester Grade Point Average (SGPA):** It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

AA. **Cumulative Grade Point Average (CGPA):** It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

BB. **Transcript :** Transcript will display the program details like, all Semesters SGPA with details, Non-Examinational Credits with details as well as CGPA and Class/Division.

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Programme Specific Provision

26. There shall be Six Examinations leading to the Degree of Bachelor of Arts, namely:

    i) the B.A. Semester-I & II at the end of the each semester;
    ii) the B.A. Semester-III & IV at the end of the each semester;
    iii) the B.A. Semester-V & VI at the end of the each semester.

27. The examinations specified in Para 26 shall be held twice in a year at such places and on such dates as may be prescribed by the University.

28. Subject to his/her compliance with the provisions of this Direction and of other Ordinances enforced from time to time, an applicant–
    For admission to वाङ.मय स्नातक(B.A). Semester - I Examination shall have passed:-

    i) the 12th Standard Examination of Maharashtra State Board of Secondary and Higher Secondary Education or an examination recognized as equivalent thereto and any other board with English as one of the subject of passing and in such subjects and with such standards of attainments as may be prescribed;

    OR

    ii) the XII Standard Examination of Maharashtra State Board of Secondary and Higher Secondary Education in Vocational Stream with English as one of the subject of passing.

    OR

    iii) the Diploma in Education (D.Ed.) (Two years course) of Maharashtra State Educational Research and Training Council, Pune with English as one of the subject of passing.

OR

iv) Minimum Two Years course after 10th standard approved by Government of Maharashtra with English as one of the subject of passing.

Table No. 7.
Eligibility for Admission, Examination and Promotion to Higher Classes

Sr. No.	Name of the Exam.	The student should have passed the exam. of	The student should have completed the following session / term satisfactorily with minimum prescribed residence time.	The student shall have earned/accumulate minimum Credits
1	2	3	4	5
1	B.A. Semester-I	As mentioned in Para 28	Semester-I	--
2	B.A. Semester-II	--	Semester-II	--
3	B.A. Semester-III	--	Semester-III	--
4	B.A. Semester-IV	--	Semester-IV	- -
5	B.A. Semester-V		Semester-V	Prescribed for Semester I and II together from all courses.
6	B.A. Semester-VI	--	Semester-VI	--

29. An examinee for the B.A. Semester - I to VI examination shall be examined in the following subjects namely :

A) Discipline Specific Core (DSC) :

i) Compulsory English
ii) Any one of the following compulsory Second languages namely
a) Marathi, Hindi, Urdu, Persian , Pali and Prakrit Supplementary English
b) Other Indian Languages :- Telugu, Bengali, Gujrathi
c) Classical Languages :- Sanskrit, Latin.
d) Foreign Languages :- French, German, Russian.

iii) Any Three of the following Discipline Specific Core subjects, namely;
1) English Literature
2) Literatures of the Modern Languages, viz, Marathi, Hindi, Urdu, Telugu, Bengali, Gujrathi, French, German or Russian.
3) Literatures of the Classical Languages, viz, Sanskrit, Arabic, Persian , Pali and Prakrit.
4) History
5) Geography
6) Economics
7) Philosophy
8) Music
9) Home Economics
10) Sociology
11) Psychology
12) Ancient Indian History Culture and Archaeology
13) Political Science
14) Statistics
15) Public Administration
16) Linguistics
17) Community Development & Extension
18) Co-operation
19) Village Industries
20) Functional English
21) Early Childhood Care and Education
22) Rural Handicrafts
23) Rashtrasant Tukdoji Thoughts
24) Yogashatra
25) Library and Information Science
26) Food Technology
27) Apparel & Textile Designing
28) Human Rights
29) Rural Development

30) Human Development
31) Anthropology
32) Sound Recording
33) B.A. Thought (A.C. Item No.30 Dated 04.05.2022)

B) Discipline Specific Elective (DSE) : Semester-VI

There shall be Discipline Specific Elective (DSE) course in Semester VI for each subject as prescribed by the University. Student can select any one paper out of elective papers prescribed for the particular core subject. This will be a specialization offered to the students in the respective core subject. The nature/pattern of these papers shall be the same as other papers.

30. (a)The student who has earned minimum 80% credits from DSC/DSE courses, 13 or 10% credits. (whichever is minimum) from ancillary credit courses and balance **10%** credits from any of the university approved courses of the programme at Bachelor of Arts Part-I (Semester-I & II) Examination, Bachelor of Arts Part-II (Semester -III & IV) and Bachelor of Arts Part III (Semester- V & VI) out of minimum credits prescribed for Bachelor of Arts Degree Examination, shall be entitled to receive a Credit Grade report signed by the Director, Examination and Evaluation.

(b) After passing the Bachelor of Arts Part III (Semester-VI) Final Examination and satisfying other conditions as per Ordinance No. 19 and on payment of prescribed fee, the examinee will receive a Degree in the prescribed form signed by the Vice- Chancellor.

Further, on request & payment of the prescribed fees, the examinee shall receive a transcript signed by the Director, Examination &Evaluation. The Degree will be awarded on the basis of CGPA**.**

31. Successful examinees at the B.A Final, Semester - VI Examination shall be placed in Class / Division as follows :

Equivalence of Class/Division to Corresponding C.G.P.A.

Sr. No.	C.G.P.A.	Class/Division
1	7.5 or more than 7.5	First Class with Distinction
2	6.00 or more but less than or equal to 7.49	First Class
3	5.50 or more but less than or equal to 5.99	Higher Second Class
4	5.00 or more but less than or equal to 5.49	Second Class
5	4.00 or more but less than or equal to 4.99	Pass

Notes:- DSC, DSE and ancillary credits and grades there of shall be taken into account for computing CGPA.

32. The existing Ordinance No. 146 and Directions No.47/2022 Dated 15.09.2022 of the programme shall be repealed stage-wise and only applicable to the students who have already sought their admissions as per its provisions and shall repealed after exhausting the chances given to the failure students of old programme by the University.

Sd/-
(Dr. Dileep N. Malkhede)
Vice-Chancellor,
Sant Gadge Baba Amravati University

Amravati
Dated : 20 /09/2022

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Bachelor of Arts - Full Time Three Years Degree Programme

1) A Student shall have to take admission every year in the respective Institute/ College for completion of an Academic Year of this three-year degree programme.

2) The B.A degree shall consists of six semesters i.e. Semester I & II in the first Academic Year, Semester III & IV in the second Academic Year & Semester V & VI in the third Academic Year.

3) Student has to complete all the six Semesters for the award of Degree of Bachelor of Arts and should fulfill conditions as per Ordinance No. 19.

4) Every Semester of B.A. programme shall be of at least 90 teaching days in a semester and shall be of at least 180 teaching days in an Academic Year.

5) The examination in B.A. for each Semester will have theory and Practical Subjects as per the scheme of Teaching, Learning, examination and Evaluation. An examinee shall have option to choose the subjects as per his own choice. Maximum Marks for theory & Practical, Internal Marks and Minimum Passing Marks for each paper is as shown in the Scheme of Teaching, Learning, Examination and Evaluation attached herewith as per Annexure-A1 and A-2.

For internal examination of 20 marks, the concerned subject teacher/ faculty member shall asses the student on the following points :

1)	Class Attendance	–	5 Marks
2)	Unit Test / Seminar / Assignments / Study Tour/ Media Visit	–	15 Marks

6) An applicant for admission to an examination specified in Paragraph 5) shall prosecute a regular course of study in courses prescribed for the examination concerned for not less than one semester in a particular semester in a College affiliated to the University.

7) The Examinations shall consists of the subjects as indicated in the Scheme of Teaching, Learning, Examination and Evaluation as per Annexure A1 to A2.

XXXXXXXX

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Sant Gadge Baba Amravati University Amravati **Annexure-A1**

Scheme of teaching, learning &Examination leading to the Degree Bachelor of Arts (B. A.) (Three Years- Six Semesters Degree Programme - C.B.C.S)

(B. A. Part-I) Semester-I

Sr. No	Subjects	Subject Code	Teaching & Learning Scheme							Duration of Exams Hrs.	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits				Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q External	Skill Enhancement Module Internal	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Compulsory English (DSC -1)		4	-	-	4	3	-	3	3	80	20	-	-	100	40	p
2	Communication Skill in English (AEC)			1		1	0.75		0.75	1	-	-	25	-	25	10	p
3	Second Lang. (DSC -2)		3	-	-	3	2.25	-	2.25	3	80	20	-	-	100	40	p
4	Communication Skill in Second Language (AEC)		-	1	-	1	0.75	-	0.75	1	-	-	25	-	25	10	p
5	(DSC -3) Non Practical Subject		5	-	-	5	4	-	4	3	80	20	-	-	100	40	p
6	(DSC -4) Non Practical Subject		5	-	-	5	4	-	4	3	80	20	-	-	100	40	p
7	(DSC -5) Non Practical Subject		5	-	-	5	4	-	4	3	80	20	-	-	100	40	p
8	(DSC) English literature		6	-	-	6	4.50		**4.50**	3	80	20	-	-	100	40	p
	Practical Subjects																
8	Geography/ Home Economics Yogashastra		5	-	-	5	4	-	4	3	60	20	-	-	80	32	p
	Practical		-	-	2	2	-	0.75	0.75	3	-	-	10	10	20	8	p
9	Music		2	-	-	2	1	-	1	3	50	20	-	-	70	28	P
	Practical		-	-	8	8	-	3	3	3	-	-	20	10	30	12	P
10	Psychology		4	-	-	4	3	-	3	2	60	20	-	-	80	32	P
	Practical		-	-	6	6	-	2.25	2.25	3	-	-	10	10	20	8	P
11	Statistics		5	-	-	5	4	-	4	3	60	20	-	-	80	32	P
	Practical		-	-	8	8	-	3	6	3	-	-	10	10	20	8	P
12	Other Practical Subject		4	-	-	4	3	-	3	3	60	20	-	-	80	32	P
	Practical		-	-	2	2	-	0.75	0.75	3	-	-	10	10	20	8	P
	Generic Open Elective Course		2	-	-	2	2	-	2	2	50	-	-	-	50	20	
	Induction Programme		30 Hours of one week				1		1	Non Exam Credits							

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till V semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report. - OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report.

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE - 2022 - PART ONE - 306

Sant Gadge Baba Amravati University Amravati **Annexure-A2**

Scheme of teaching, learning &Examination leading to the Degree Bachelor of Arts (B. A.) (Three Years - Six Semesters Degree Programme - C.B.C.S)

(B. A. Part-I) Semester-II

Sr. No	Subjects	Subject Code	Teaching & Learning Scheme							Duration of Exams Hrs.	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits				Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q External	Skill Enhancement Module Internal	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Compulsory English (DSC -1)		4	-	-	4	3	-	3	3 Hours	80	20	-	-	100	40	p
2	Communication Skill in English (AEC)			1		1	0.75		0.75	1	-	-	25	-	25	10	p
3	Second Lang. (DSC -2)		3	-	-	3	2.25	-	2.25	3 Hours	80	20	-	-	100	40	p
4	Communication Skill in Second Language (AEC)		-	1	-	1	0.75	-	0.75	1	-	-	25	-	25	10	p
5	(DSC -3) Non Practical Subject		5	-	-	5	4	-	4	3 Hours	80	20	-	-	100	40	p
6	(DSC -4) Non Practical Subject		5	-	-	5	4	-	4	3 Hours	80	20	-	-	100	40	p
7	(DSC -5) Non Practical Subject		5	-	-	5	4	-	4	3 Hours	80	20	-	-	100	40	p
8	(DSC) English literature		6	-	-	6	4.50		**4.50**	3 Hours	80	20	-	-	100	40	p
	Practical Subjects																
8	Geography/ Home Economics Yogashastra		5	-	-	5	4	-	4	3 Hours	60	20	-	-	80	32	p
	Practical		-	-	2	2	-	0.75	0.75	3 Hours	-	-	10	10	20	8	p
9	Music		2	-	-	2	1	-	1	3 Hours	50	20	-	-	70	28	P
	Practical		-	-	8	8	-	3	3	3 Hours	-	-	20	10	30	12	P
10	Psychology		4	-	-	4	3	-	3	2 Hours	60	20	-	-	80	32	P
	Practical		-	-	6	6	-	2.25	2.25	3 Hours	-	-	10	10	20	8	P
11	Statistics		5	-	-	5	4	-	4	3 Hours	60	20	-	-	80	32	P
	Practical		-	-	8	8	-	3	6	3 Hours	-	-	10	10	20	8	P
12	Other Practical Subject		4	-	-	4	3	-	3	3 Hours	60	20	-	-	80	32	P
	Practical		-	-	2	2	-	0.75	0.75	3 Hours	-	-	10	10	20	8	P
	Generic Open Elective Course		2	-	-	2	2	-	2	2 Hours	50	-	-	-	50	20	

L: Lecture, T: Tutorial, P: Practical

1. Examination and question pattern of B.A. Degree Programme:- (Semester I to VI)

1) Examinations shall be conducted in Offline mode in accordance with Ordinance No. 9. However, under special circumstances and in specific cases, those can be conducted in Online mode on the recommendations of Board of Examination & Evaluation and approval by the Academic Council.
2) An examinations shall be held at the end of each semester.
3) Question paper of examination shall be in English, Marathi and Hindi as applicable.
4) The question bank for theory/subject/paper (MCQ, Long answer, short answer, problems or numerical, computations, design as applicable) except case study should be prepared along with memorandum and solutions of problem.
5) Syllabi of respective papers have been divided in to five units for each paper/subject.
6) Weightage shall be equal for each unit of the respective paper/subject.
7) All questions in the question paper shall be compulsory.

Notes :

1) Distribution of Marks of Theory

For Non-Practical Subjects :

a) 60 Marks for Descriptive Type Questions.
b) 20 Marks for Multiple Choice Questions.
c) 20 Marks for Skill Enhancement Module.

For Practical Subjects: (Geography, Psychology , Home –Economics& Functional English)

a) 40 Marks for Descriptive Type Questions.
b) 20 Marks for Multiple Choice Questions
c) 20 Marks for Practical
d) 20 Marks for Skill Enhancement Module.

For Practical Subjects : (Music)

a) 30 Marks for Descriptive Type Questions.
b) 20 Marks for Multiple Choice Questions
c) 30 Marks for Practical
d) 20 Marks for Skill Enhancement Module.

2) The students once offered the subjects under Discipline Specific Core (DSC) in first Semester, it shall be continued from Semester-II to V & once the subject offered under DSC shall be continued under DSE in VI Semester.

3) There shall be Five Units (Four units for theory & 1 unit for SEM) / Questions of 12 Marks for Theory Subjects & 5 units / Questions of 8 Marks for Practical Subjects

4) M.C.Q. 4 x 5, Skill Module 4 x 5, Practical 4 x 5

A) The Executive Council dated ½-4-1977 has prescribed the Teaching Periods in the various subjects as follows.

i) **English (Compulsory) :**

For B.A.I,II and Final Examinations: 4 Lecture periods and 1 tutorial for a batch of 20 students per week. A batch will not exceed 20 by more than 10% of 20.

ii) **English Literature :** B.A. Part I, II and Final : 6 periods per week.

iii) **Supplementary English :**
B.A. Part I : 3 Periods per week ; B.A. Parts II & Final : 4 Periods Per Week

iv) **Compulsory Languages** : (Marathi, Hindi, Sanskrit, Urdu and Pali & Prakrit)
B.A. Part-I : 4 Periods per Week; B.A. Part-II: 4 Periods per Week; B.A. Final : 4 Periods per Week

v) **Optional Languages :** (Marathi Literature, Hindi Literature, and Sanskrit Literature etc.)
B.A. Part-I, II and Final : 5 Periods per Week

vi) Subjects in the Faculty of Social Sciences where no Practicals are prescribed : B.A. Part-I, II and Final : 5 Periods per Week.

B) SUBJECTS WHERE PRACTICALS ARE PRESCRIBED FOR B.A. PART-I, II AND FINAL.

i) **Music :** 6 Practical and 2 theory periods. The number of students should not exceed 7 per batch for practical.

ii) ****Geography : 5** lectures and 1 practical of 2 periods per week . The number of students should not exceed 16 per batch for Practical.

iii) ***Psychology :** 4 theory periods and 3 Practical per week per batch of 16 students and 1 periods for Statistics per week.

iv) ****Home Economics : 5** Lectures and 1 Practical of 2 Periods per Week for a batch of 16 students.

v) **Statistics : For B.A. Part-I :** 5 theory lectures and 4 Practical Periods (2 Periods each per week)

vi) **Statistics : For B.A. Part-II and Final :** 5 Theory Lectures and 6 Practical Periods per week.

vii) **Mathematics : B.A. Part-I II and Final :** 9 Theory Periods and 1 Tutorial for a batch of 20 students per Week.

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*As modified by the Executive Council dated 27/28-4-1979
* As modified by the Executive Council dated 22-9-1977
* As per letter Nos. NGC/3299/ताावि/अवि/४१४६५/मवि-२& NGC/3299 ताावि/अवि/४६९०९/अवि मवि-२dated 5.7.1999 & 24.1.2000 respectively received from Director of Education (Higher Education) Pune and approved / noted by the Academic Council meeting dated 5.6.99 & 11.4.2000 vide Item No. 33 & 33 respectively.

Note:** As accepted by the Academic Council Dt. 6.5.2015 Vide Noti.No.24 & 25 /2016 in Gaz. .Part- Two

C) i) Academic Council in its meeting held on 6.5.2015 Vide Item No. 39 has approved to increase in the existing work load i.e. from "4 lectures and 1 Practical of 2 Periods per week to 5 lectures and 1 Practical of 2 Periods per week" for the subject Home Economics at graduate level.

ii) Academic Council in its meeting held on 6.5.2015 Vide Item No. 40 & 41 has approved to reduce the existing intake capacity for practical batch from 20 to 16 students for Home Economics & Geography subject.

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DIRECTION

No. :55 /2023. Date : 11/10/2023

Subject : Examinations leading to the Degree of Bachelor of Commerce (वाणिज्य स्नातक)(Three Years – Six Semester Degree Course) under Choice Based Credit System Direction, 2023.

Whereas, Ordinance No. 147, the Direction No. 51 of 2022 dated 15/09/2022 and the Direction No. 66/2022 dated 27/09/2022 with respect to an examination leading to the Degree of Bachelor of Commerce (वाणिज्य स्नातक) (Three Years – Six Semester Degree Course) 2022 are in existence in the University,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(c) provides for Choice Based Credit System for all certificates, diplomas, Degrees, post-graduate programmes and other academic distinctions,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(v) for states that the Academic Council has to create policy, procedure and practice for Choice Based Credit System for all Academic programmes,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(y) provides the research projects are an integral part of Choice Based modules for post-graduate programmes,

AND

Whereas, while considering Item No.32 of Academic Council dated 15/11/2018, Dr. A.B. Marathe, member of Academic Council proposed to implement Choice Based Credit System for first year from Academic Session 2018-2019 and progressively up to final year,

AND

Whereas, while considering the proposal of Dr. A.B. Marathe, the Academic council has constituted a Committee No. 01/2018,

AND

Whereas, while considering the recommendations of the Committee No 01/2018, Academic Council in its meeting dated 13/01/2020 vide Item No. 17 has constituted a Committee No. 02/2020 under the Chairmanship of Pro Vice-Chancellor,

AND

Whereas, the recommendations of Committee No.02/2020 had been placed before the meeting of the Academic Council dated 04/12/2020 vide item No.72,

AND

Whereas, while considering the recommendations of the committee No.02/2020 vide Item No.72 along with the Scheme of Choice Based Credit System, Academic Council resolved to implement Choice Based Credit System from Academic Year 2021-2022,

AND

Whereas, it was necessary to frame the draft provisions of Direction/Ordinance for Choice Based Credit System, matter is placed before the Committee No.02/2020 and the same Committee No.02/2020 had constituted faculty wise Sub Committees under the Chairmanship of the respective Dean of the Faculty,

AND

Whereas, the Academic Council in its meeting dated 13/10/2021 vide Item No.12 has re-considered the above resolution regarding implementation of the Choice Based Credit System, and resolved to implement it from the Academic Session 2022-2023,

AND

Whereas, the recommendations of the Faculty wise sub committees were placed before the Committee No.02/2020 in its first online meeting dated 24/01/2022, and there after the series of meetings were held on 02/02/2022, 03/02/2022, 08/02/2022, 10/02/2022 and 12/02/2022,

AND

Whereas, above recommendations of Committee No.02/2020 pertaining to the programmes of Bachelor of Commerce (वाणिज्य स्नातक), were placed before the meeting of the Faculty of Commerce and Management in its meeting dated 09/03/2022 and recommend to Academic Council,

AND

Whereas, the Academic Council while considering the recommendations of the Faculty of Commerce and Management vide Item No.50 approved the Scheme of Teaching, Learning, examination and evaluation along with Provisions of Direction/Ordinance,

AND

Whereas, the respective Board of Studies under the Faculty of Commerce and Management in its meeting dated 03/6/2022 and 04/06/2022 framed syllabi by taking into consideration the Scheme of Teaching, Learning, Examination and Evaluation along with Provisions of Direction/Ordinance of Choice Based Credit System,

AND

Whereas, the Draft syllabi framed by the various Board of Studies under the Faculty of Commerce and Management were placed before the online emergent meeting of Faculty of Commerce and Management dated 28/07/2022 and faculty accepted and recommended the draft syllabi to Academic Council,

AND

Whereas, the minutes of the Faculty of Commerce and Management in its online emergent meeting dated 28/07/2022 along with draft syllabus were approved by Hon'ble Vice-Chancellor under section 12(7) of Maharashtra Public Universities Act, 2016 on behalf of Academic Council,

AND

Whereas, the Direction No.66/2022 dated 27/09/2022 which was issued under sub section (8) of Section 12 of Maharashtra Public Universities Act, 2016 for this curriculum has to be converted into Statute, Ordinance or Regulation as the case may be within 6 months as per the proviso of said section failing which such Direction shall automatically lapsed,

AND

Whereas making an Ordinance / Regulation is a time consuming process.

Now, therefore I, Dr. Pramod G.Yeole, In-charge Vice-Chancellor, Sant Gadge Baba Amravati University, Amravati in exercise of powers conferred upon me under Sub-section (8) of Section 12 of the Maharashtra Public Universities Act, 2016 do hereby direct as under-

1. i) This Direction may be called, "Examinations leading to the Degree of Bachelor of Commerce (वाणिज्य स्नातक) (Three Years – Six Semester Degree Course) under Choice Based Credit System Direction, 2023.
   ii) The Degree of Bachelor of Commerce - (वाणिज्य स्नातक) shall belong to the Faculty of Commerce and Management
2. This direction shall come into force from the date of its issuance.
3. The provisions of directions, eligibility criteria and other details are as follows and the Scheme of Teaching, Learning, Examination and Evaluation of semester – I to IV is appended herewith vide **Annexure – A1 to A4.**

Common Provisions

4. In this Direction unless context otherwise requires –

Definitions:

Choice Based Credit System (CBCS) : Choice Based Credit System means the curricular system that offers multiple interdisciplinary choices for students to select from the courses (core elective or minor or soft skill coursers) to accumulate credits;

Any other word and expression used herein and not defined but defined in*parimateria* such as the Maharashtra Public Universities Act, 2016, Directions and UGC regulations shall have the same meaning as assigned to them in the said enactments.

5. As per the scheme of teaching, learning, examination and evaluation, theory/practical examinations of Semester-I, II, III, IV, V& VI shall be conducted by the University (except SEM, GOEC, Third Semester Environmental Science and ancillary Credit courses) at the end of each semester.

The theory/practical examinations of all the Semesters shall be held as per the following schedule :

Table No. 1

Sr. No.	Name of the Examination	Main Examination	Supplementary Examination
1	Semester-I , III & V	Winter	Summer
2	Semester-II, IV & VI	Summer	Winter

6. The practical examination of all semesters shall be conducted by the University as prescribed. Practical examination of all the Add-on courses of all semesters will be conducted by the College/Institution/University Department.

7. An applicant to an examination specified in Para 26 shall pursue a regular course of study in courses prescribed for the examination concerned for not less than one semester in a particular semester in a College/Institute/University Department.

Provided that the student shall be eligible to appear for examination if

a. he/she satisfies the conditions in the table of eligibility of admission and promotion to higher semester and the provisions there under.
b. he/she complies with the provisions of the Ordinance pertaining to the Examination in general from time to time.
c. he/she has prosecuted a regular course of study in a College Institute/University Department affiliated to the University.
d. he/she has in the opinion of the Principal/ Director/Head of Department shown satisfactory progress in his/her studies.

8. Without prejudice to the provisions of Ordinance No. 6 shall be applicable in *mutatis-mutandis* to every collegiate/non collegiate student.
9. The fees for each theory examination and practical examination conducted by the University shall be as prescribed by the University, from time to time.

(A) Ability Enhancement Course (AEC) :

1) **Languages (Communication Skills) :** There shall be a compulsory course of Communication Skills in English and Second Language for all students in Semester I and II as specified in the scheme of Teaching Learning Evaluation and Examination of various programmes .

2) **Environment Studies :**There shall be a Compulsory course titled Environment Studies for Semester-III and Semester-IV for all the students.

- There shall be two periods /week for this subject. There will be internal evaluation on the basis of any one or more techniques such as survey report, visit report, assignments, seminar presentations, test, open book test etc. during third semester and student will earn 2 Credits as other credit courses (as shown in Table A) for studying this subject in third semester. The college/university department shall send the credits earned by the student before start of third semester examinations to the University. It will be reflected in 3rd semester credit grade report.
- The Examination of this subject shall be conducted at the end of IV Semester. There shall be a Theory examination of 70 marks and Project Report/ Internal Work/ Survey shall be of 30 marks. The total marks for this subject shall be 100. The students will earn 2 exam credits which will be reflected in fourth semester credit grade report.

(B) Skills Enhancement Module (SEM) :

There shall be skill enhancement module in each Course of DSC, DSE.

These skill modules shall have 20% weightage in the total curriculum of every theory subject/paper/course for every semester except GOEC, Environment Studies and ancillary credit courses. These skill modules shall be based on Learning Outcome of the course. These modules shall be used for continuous evaluation of the students. These modules will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion, Study tour, MCQ, Open Book examination (OBE), etc. Marks shall be sent in the format prescribed by the University from time to time.

(A) Generic Open Elective Course (GOEC) 1 & 2 :

There shall be a course as Generic Elective I & II for the semester I and II respectively.

There will be internal assessment examination of 50 marks each for this subject (I and II). There shall be two periods /week for this course for all the students. This course will be College Level Evaluation Course. The evaluation of this course shall be conducted by the college at the end of each semester and the marks, credits, grade shall be communicated to the University before the start of examination.

These courses shall be as designed by the University. These courses can also be additionally provided to the students by the College as per their distinctive specialized courses after approval from the University. Some proposed courses are as follows..

A) Gender Sensitisation
B) Bharat Shodh
C) Communication Skill
D) Indian Constitution
E) Personality Development & Soft skill Components etc.
F) Library and Information Resources
G) Universal Human Values : Understanding Harmony
H) NCC Studies
I) Intellectual Property Rights (I.P.R.)
J) Disaster Management
K) Swachha Bharat Summer Internship Programme
L) Jeevan Koushalya Shikshan(जीवन कौशल्य शिक्षण)
M) Van, Mrud, Jal Saksharata, Vishayak Babi(वन, मृद, जल साक्षरताविषयक बाबी)
N) Bal Adhikar Sanrakshan(बाल अधिकार संरक्षण)
O) Hindi Bhasha Samvardhan(हिन्दी भाषा संवर्धन)
P) Case Study
Q) Artificial Intelligence Technology
R) Block Chain
S) Bhartiya Nivadnuka Ani Matdar Jagruti Karyakram(भारतीय निवडणूका आणि मतदार जागृती कार्यक्रम)
T) Skill courses approved by Sector Skill Councils (SSC) &National Skill Development Council (NSDC) with due endorsement from the University

U) Specialized Generic (Open) Skill Courses (These courses may be designed by the College/Institute/ University Department considering the local needs. After approval from the University, these courses may be offered to the students.

Further, additional courses can be suggested by the respective Boards of Studies subject to the condition that GOEC should not be repeated from DSC, DSE & AEC.

10. **Ancillary Credit Courses :**

Induction Programme :- (Semester- I)

(A) Induction Programme shall be undertaken by the College/Institute/University Department and offered to students as prescribed by the University from time to time. This course shall be organised for I Year Semester-I Students only at the beginning of the semester. It shall be evaluated on basis of 1 credit for 30 hrs of Induction programme of one week. The Credit of the Induction Programme will be reflected in the Credit Grade Report of 1st Semester.

(B) **Internship/Apprenticeship/ Field Work/ Work Experience :- (S**emester- I to V)

There shall be Internship/Apprenticeship/ Field Work/ Work Experience during vacation for duration of 120 hours available to all the students, to be completed during Semester-I to V.

This will carry 04 Credits for learning of 120 hours It should be evaluated by mentor teacher / faculty member with the help of Work Report certified by trainer where Internship/Apprenticeship/ Field Work/ Work Experience is taken and as submitted by students. It shall be completed in vacation only. The tasks to be undertaken under this component are elaborated below and students may opt for any one of these categories. The Credits of Internship/Apprenticeship/ Field Work/ Work Experience shall be reflected in the Credit Grade Report of sixth Semester. The grade and credits obtained by the students should be communicated to the University by the College/Institution/Department before the start of University VI semester examination.

i) Internship/ Apprenticeship : Internship/ Apprenticeship preferably of 120 hours in the Academic Institutes of National Importance or Research Laboratories or Institutes or Industries or companies or firms identified by the College/ Institute/University Department. The participation shall be duly certified by identified Internship / Apprenticeship provider which is to be verified by the Principal/Director/HOD/Mentor teacher / faculty member of the College/Institute/University Department.

ii) Field Work: Students can undertake fieldwork for duration preferably of 120 hours related to their subject in a broad sense. This fieldwork shall be identified by the College/Institute/University Department and to be certified by the field work organizer and verified by Principal/Director/HOD/Mentor teacher/ faculty member of the College/Institute/University Department.

iii) Work Experience: Work experience for duration preferably of 120 hours includes students participating in the regular work of any Firm/Company/Industry/Organization/ Institute/ Local Body identified by the College/Institute/University Department related to their learning subject and verified by Principal/Director/HOD/ the mentor / concerned teacher / faculty members of the College/Institute/University Department.

(C)**Open Elective Course (OEC) may be opted from Semester I to Semester VI:**

There shall be Open Elective Course for the students. This will include the following types of courses. Students can select one or more of these courses. These courses shall be of intra-disciplinary as well as inter-disciplinary nature. Students can earn cumulatively maximum 5 Credits in this course.

i) General Interest Course (GIC) : General Interest Courses shall be from different programmes/disciplines and the curriculum of these courses shall be as prescribed by the University. This course will be evaluated by the concerned teacher / faculty member at the college level and the Credit shall be communicated to the University before the start of VI semester examination. If the concerned subject teacher / faculty member/ mentor / guide is from the College/Institute / other than the College / Institute / University Department where the student has taken admission to pursue regular course of study, then the credit earned by the student should be submitted by the teacher / faculty member / mentor / guide through the Principal of the parent institute. In such cases, the consent from the Principal of parent institute and the concerned teacher/ faculty member / mentor / guide should be obtained by the student before commencement of the course. The student may opt any course of any other discipline /faculty of his/her interest as GIC. The nature of these courses shall be self study under the guidance of concerned teacher/ mentor/ faculty member/guide.

ii) Skill Course: The students will be offered Skill Courses. The courses shall be designed by respective Boards of Studies or by concerned Sector Skill Council / National Skill Development Councils (NSDC).The Skill courses may be designed by the Colleges / Institutes/University Departments and after approval of the University it may be offered to the students. This course will be evaluated by the concerned teacher / faculty member at the College level and the credit shall be communicated to the University before the start of VI semester examination. For the skill courses opted from Sector Skill Council (SSC) or NSDC, the evaluation may be done by respective council & the credit shall be communicated to the University before the start of VI semester examination.

iii) MOOC : The students may opt MOOC courses identified by the teacher/mentor/faculty member and maximum *5 credits* may be earned by the students after successful completion of these MOOC courses with a minimum 75 hours of course for on different online training platforms. The concerned teacher / faculty member shall act as a mentor and based on the students' performance in the course, the teacher/mentor/faculty member shall award Credits in accordance with the Marks/Grades given by SWAYAM etc. After mapping with University grading system (given separately with exam scheme), the College/Institution/ shall communicate them to the university before the start of VI semester examination. College/University Department can develop MOOC related to their concerned subject and after the approval of the University, these courses may be offered to the students. These courses shall be of intra- disciplinary as well as inter disciplinary nature.

(D) Extracurricular and Co-curricular Activities : (In all Semesters)

The students may earn maximum cumulative 5 credits from the activities as given in Table No. 2,3 & 4 after securing rank/ participation at College / University /State/ Zone/ National / International level events. These credits shall be transferred in option to Open Elective Course (OEC) so that these performers shall be given relaxation from undertaking this course. These credits can be earned during the entire degree course period but before the start of VI Semester examination. These credits will be reflected in the final semester Grade Report. The mentor/ concerned teacher/faculty member shall award the Credits to the student based on his/her performance and College / Institution/University Department shall communicate these to the University as given in Table No. 2, 3 and 4.

Table No. 2

Comprehensive Credit Distribution

S. N.	Activities	Credits at Levels						Grade point	Minimum passing grade
		College	University	State	Zone, if exist	National	International, if exist		
1	Unnat Bharat Abhiyan[UBA]	1	2	3	4	5	6	4	P
2	Sports activities (see table no. 3)	1	1 / 2	2 / 3	3 / 4	4 / 5	5 / 6	4	P
3	Cultural activities	1	2	3	4	5	6	4	P
4	N.S.S. activities Camps	1	2	3	4	5	6	4	P
5	Academic activities like review paper presentations, Aavishkar, start-up, Hackathon, Quiz competitions, other curricular, co-curricular activities, students exchange programme etc. Research Paper published/presented	1 --	2 1	3 2	4 -	5 4	6 6	**4**	**P**
6	**Participation in Summer school/ Winter School / Short term course** (not less than 30 hours 1 or 2 weeks duration) (not less than 60 hours 2 or 3 weeks duration) **Scientific Surveys, Societal Surveys** **Field Visits, Study tours, Industrial Visits,**	2 Credits 4 Credits 2 Credits 1 Credit						**4**	**P**
7	NCC activities	**As given in Table-4**							

Table No. 3

Credit Distribution for Sports

Sr. No.	Particulars of Sports Status (Individual/ Team)	Credits	Credit Point	Passing Grade
1	College Level Participation	1	4	P
2	University Level Participation	1	4	P
3	University Level Rank 1, 2, 3	2	4	P
4	State Level Participation	2	4	P
5	State Level Rank 1, 2, 3	3	4	P
6	Zonal Level Participation	3	4	P
7	Zonal Level Rank 1, 2, 3	4	4	P
8	National Level Participation	4	4	P
9	National Level Rank 1, 2, 3	5	4	P
10	International Level Participation	5	4	P
11	International Level 1,2,3	6	4	P

Table No. 4
Credit Distribution for NCC Activities

Sr. No.	Particulars of NCC Activities	Credits	Credit Point	Passing Grade
1	Participation in NCC activities	1	4	P
2	'B' Certificate obtained	2	4	P
3	'C' Certificate obtained	3	4	P
4	State Level Participation	4	4	P
5	National level Participation	5	4	P
6	International Level Participation	6	4	P

11. In the Scheme of Teaching, learning, Evaluation & Examination, credits are to be given with the maximum marks allotted to the Semester Examination in each paper for the theory and the practical of each of the Six Examinations. Also Computation of SGPA and CGPA, letter grades and grade point, equivalence of Class / Division to corresponding CGPA shall be indicated as given in Appendix A& B.

12. The system of evaluation will be as follows:

Theory papers, practicals and internal assessment will be evaluated in terms of marks. The marks will be added together and then converted into a grade and later a grade point average. Results will be declared for each semester and the final examination will give total grades and grade point average

13. The computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of an examinee of *under graduate course* shall be as given in Appendix B.

14. Provisions of Ordinance No. 8/2001 in respect of an Ordinance to provide grace marks for passing in a Head of passing and Improvement of Division (Higher Class) and getting Distinction in the subject and condonation of deficiency of marks in a subject shall apply to the examination under this Direction.

15. An unsuccessful examinee at any of the above examination shall carry college assessment marks (Sessional Marks) of the theory/Practical examination to the successive attempt at the examination.

16. Provisions of Maharashtra Public Universities Act, 2016, Section 89 Chapter VIII, will be applicable for the declaration of the results of every examination and evaluation conducted by the University .

17. The names of the examinees passing the examination as a whole in the minimum prescribed period and obtaining the prescribed number of places in the CGPA shall be arranged in order of merit as provided in the examination in general Ordinance no. 6 provided that the merit list only be published in summer examination.

18. Subject to provisions in other ordinances, directions, no person shall be admitted to an examination under this Direction, if he / she has already passed the same examination of this university or an equivalent examination of any other University.

19. An examinee who has completed the term satisfactorily but fails to present himself/herself for the examination shall be eligible for readmission to the same examination, on payment of fresh fees and other fees as may be prescribed by the university from time to time.

20. A Student who could not complete a semester satisfactorily or did not keep term will be eligible for readmission to the same semester. However, readmission to the semester should be allowed only in regular session of that semester. In such case, the candidate will not be eligible to get admission in higher semester.

21. a) The student shall have to earn minimum 80% of total prescribed credits for the Degree (to be eligible for award of the degree), from DSC/DSE courses, minimum 13 or 10% of total prescribed credits, (whichever is minimum) from Ancillary Credit Courses and balance credits from any of the university approved courses of the programme.

b) A candidate/student who has successfully completed all requisite courses approved by the university and earned minimum prescribed total credits for which he/she is admitted for the under graduate degree programme and accumulated the required credits for the program and who has put in the minimum residence time prescribed for each semester of the program shall be eligible to receive the degree.

22. Examinations will be conducted in Offline mode in accordance with Ordinance No.9. However, under special circumstances and in specific cases, those can be conducted in Online mode on the recommendations of Board of Examination & Evaluation and approval by the Academic Council.

23. Generally and preferably College / Institute Internal Assessment examinations & University examinations papers should be set from the Question Bank prepared by the University.

24**. Power to Modify and Remove Difficulties :**

a.) Notwithstanding, anything contained in the foregoing, Hon'ble Vice-Chancellor in consultation with the Dean of the faculty shall have the power to issue directions or orders to remove any difficulty,

b.) Nothing in the foregoing may be construed as limiting the power of the University to amend**,** modify or repeal any all of the above.

25. **CBCS Working Committee :**

A) **University Level :**

There shall be a CBCS working committee in the University comprising of the following members :

1. Vice-Chancellor	-	Chairman
2. Pro-Vice Chancellor	-	Member
3. Deans of all faculties	-	Members
4. Two Experts not below the rank of Professors nominated by the Hon'ble Vice-Chancellor	-	Member
5. Concerned Head of the Department	-	Member
6. D. R. (Academic)	-	Member-Secretary

B) University Department Level :

There shall be a CBCS working committee in each University Department comprising of the following members :

1) Head of the University Department	-	Chairman
2 One Teacher nominated by Hon'ble Vice-Chancellor	-	Member

C) College Level :

There shall be a CBCS working committee in each affiliated college comprising of the following members:

1) Principal	-	Chairman
2) HoDs of Teaching Departments of a College	-	Members
3) IQAC Co-ordinator	-	Member- Secretary

Powers and Duties of the CBCS working Committee :

1. Committee shall take review of the Implementation of the CBCS after completion of every Semester
2. The committee shall report to the University about difficulties faced during the implementation of the CBCS to the University.
3. The committee should also consider the grievances of the students regarding the difficulties/disadvantages put to them if any during their studies under CBCS.
4. For College level and University level, the committee will also be a grievance redressal committee for implementation of CBCS, respectively.
5. The committee may consider any other matter in the interest of the students as far as the CBCS is concerned.

Table-A Ancillary Credit courses **Appendix-A**

Sr. No	Course/Programs	Nature	Semester	Organised by	Teaching Learning Training Period (Hours)	Evaluation Authority	Performance Evaluation Mode	Min. Passing Grade/Rank	Exam or Non-exam	Credit/s
1	**Induction Program**	Man-datory	I	College/ Institute/ Department	30	College/ Institute/ Department	Evaluation participation		**Non-exam**	1
2	**Internship / Apprenticeship /Field work/ Work Experience**	Man-datory	II to V	Organi-sation/ Industry/ College/ Institute	120	Organi-sation/ Industry/ College/ Institute	Score-sheet of Performance		**Non-exam**	4
3	**Environmental studies semester**	Man-datory	**III**	College	**30**	College	Survey , Project report, Test etc.	**-**	**Non-exam**	**2**
4	**Open Elective Course GIC/Skill/ MOOC**	optional	I to VI	Online/Offline Mode/SWAYAM/SSC/NSDC/college/institute	75	SWAYAM/ NPTEL/ College/ Institute/ SSC/NSDC	Certification from concerned Authority	P	**Exam or Non Exam**	5
5	**Co-curricular / Extracurricular Activities**	optional	I to VI	As per Table 2, 3&4	Adequate as per activity	Organised as per level of activity	As per Para 8(D) Table2, 3 and 4	Not applicable	**Non-exam**	5

Notes :- 1) Minimum 11(Serial No.2 and 3 mandatory) credits are mandatory to be earned by all the students from Ancillarycredit Courses as mentioned in Table A

2) Record of student's Performance cum Evaluation (containing attendance, concept knowledge, intellectual/ decision making ability, handling skill, sense of responsibility, cooperative/leadership quality, presentation/demonstration) related to Internship /Apprenticeship/Field work/Work Experience shall be maintained by the College/Institute/University Department

3) For allotment of Internship /Apprenticeship/Field Work/Work Experience, the College/ Institute/University Department shall follow standard operating procedures (SOP) with concerned College/Institute/University Department/Organization/ Industry on the basis of Memorandum Of Understanding (MOU) /Letter of Intent and Joining letter. Further, for validation, progress records, Evaluation Sheet etc. shall be maintained by the College/Institute/University Department.

4) College/ Institute/University Department shall submit credit report for Ancillary Credit Courses as per Table A to the University.

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Appendix- B

COMPUTATION OF SGPA AND CGPA AND AWARD OF DEGREE

1) Marks of each paper/subject shall be converted into grades as given in the table No. 5.

Grades and Grade Points

TABLE- 5

Grade	Description	Range of Marks obtained out of 100 or equivalent fraction	Grade point
O	Outstanding	90-100	10
A+	Excellent	80-89	9
A	Very Good	70-79	8
B+	Good	60-69	7
B	Above average	55-59	6
C	Average	50-54	5
P	Pass	40-49	4
F	Fail	Below 40	0
Ab	Absent	Ab	0

A student obtaining Grade F or Ab shall be considered failed and will be required to reappear in the examination.

2)Based on the grade points obtained in each course /Subject/Paper Semester Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) are computed as follows :

i) Computation of SGPA:

Semester Grade Point Average (SGPA) is the weight age average of point obtained by a student in a semester and computed as follows.

SGPA (Si) = $\sum Ci \; x \; Gi \; / \sum Ci$

Where Ci denotes the number of credits of the i^{th} course and G_i denotes the grade points scored by a student in the i^{th} Course.

ii) Computation of CGPA :

The CGPA is computed as follows

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

Where Si denotes the SGPA of the i^{th} Semester and C_i denotes 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.

3) **Equivalence of the conventional division/class to the corresponding C.G.P.A. in final semester is in accordance with the following table**

Equivalence of Class/Division to C.G.P.A.

Sr. No.	C.G.P.A.	Class/Division
1.	7.5 or more than 7.5	First Class with Distinction
2.	6.00 or more but less than or equal to 7.49	First Class
3.	5.50 or more but less than or equal to 5.99	Higher Second Class
4.	5.00 or more but less than or equal to 5.49	Second Class
5.	4.00 or more but less than or equal to 4.99	Pass

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Appendix -C

GUIDELINES TO PAPER SETTERS

1. Medium of Instructions and for examination shall be as prescribed by the BOS.
2. For the internal assessment & University end semester theory examinations, the paper should be set preferably from the question bank prepared by the university.

The question should be based on bloom's Taxonomy levels of (a) Remembering (b) Understanding (c) Application (d) Analysis.

Remember :

Skill Demonstrated	Question Ques / Verbs for tests
• Ability to recall of information like, facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria ability to recall methodology and procedures, abstractions, principles and theories in the field • Knowledge of dates, events, places. • Mastery of subject matter	List, define, describe, state, recite, recall, identify, show, label, tabulate, quote, name, who, when where, etc.

Understand: -

Skill Demonstrated	Question Ques / Verbs for test
• Understanding information grasp • meaning • translate knowledge into new context • interpret facts, compare, contrast order, • group, infer causes predict consequences •	Describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss.

Apply: -

Skill Demonstrated	Question Ques / Verbs for test
•• Use information use methods, concepts, laws, theories in new • situations solve problems using required skills of knowledge • Demonstrating correct usage of method or procedure	Calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify.

Analysis: -

Skill Demonstrated	Question Ques / Verbs for test
• break down a complex problem into parts. Identify the relationships and interaction • between the different parts of complex problem.	Classify, outline, break down, categorize, analyse, diagram, illustrate, infer, select.

Evaluation (Judging)Analysis: -

Skill Demonstrated	Question Ques / Verbs for test
Evaluation questions encourage students to develop opinions and make value decisions about issues based on specific criteria	. Assess, Critique, Determine, Evaluate, Judge, Justify, Measure & Recommend **Examples of questions:** • "How could you select...?" • "How could you prove...?" • "How would you prioritize...?" • "What information would you use to support...?"

Synthesis (Creating)

Skill Demonstrated	Question Ques / Verbs for test
These questions encourage students create something new by using a combination of ideas from different sources to form a new whole	. Arrange, Combine, Create, Design, Develop Formulate, Integrate & Organize **Examples of questions:** • "What could be changed to improve...?" • "How would you test...?" • "What way would you design...?" • "What outcome would you predict for...?"

The Weightage of marks should be given preferably in the range of :

(a)	Remembering	10 to 20%
(b)	Understanding	30 to 45%
(c)	Application	30 to 45%
(d)	Analysis	10 to 20%
(e)	Evaluation (Judging)	10 to 15%
(f)	Synthesis (Creating)	10 to 15%
		100 to 160%

Types of Questions:

a) Multiple Choice Question (M.C.Q.) as an when applicable:

i) **Relevant content:** The question should be based on the relevant and important content.

ii) **Application of knowledge, not only theory:** The question tests the application of knowledge, does not only test how the candidate recalls isolated theoretical facts.

iii) **Focused questions and homogeneous answers:** The question focuses on one relevant aspect of the topic, all proposed answers belong to the same content dimension (i.e., diagnosis, or causes, or managements decisions etc.)

iv) **Clear and unambiguous answer:** The best answer clearly stands out. Avoid "correct" answers with existing controversial doctrines.

v) **Appropriate level of difficulty (50% -90% correct answers):**

Too difficult - even the best candidates need to guess
Too easy - weak candidates get a "present"

vi) **Unambiguous, concise and simple phrasing:** Avoid trick questions, double negatives.

Use only common abbreviations, short sentences etc.
Avoid imprecise qualifications (often, usually etc

vii) **Avoid clues:**

Clues can help candidates guess the correct answer. Examples are:

- One answer is much more detailed than the others
- Only one answer follows grammatically from the stem •Non logical order of the answers

General Strategies :

- **Test comprehension and critical thinking, not just recall :**
  Ask MCQ so as to interpret facts, evaluate situations, explain cause and effect, make inferences, and predict results.
- **Use simple sentence structure and precise wording :**
  Write test questions in a simple structure that is easy to understand. And try to be as accurate as possible in your word choices. Words can have many meanings depending on colloquial usage and context.
- **Use familiar language :**
  The question should use the same terminology that was used in the course. Avoid using unfamiliar expressions or foreign language terms, unless measuring knowledge of such language is one of the goals of the question. Students are likely to dismiss distracters with unfamiliar terms as incorrect.
- **Place most of the words in the question stem :**
  While using a question stem, rather than an entire question, ensure that most of the words are in the stem. This way, the answer options can be short, making them less confusing and more legible.
- **Avoid giving verbal association clues from the stem in the key :**
  If the key uses words that are very similar to words found in the stem, students are more likely to pick it as the correct answer.
- **Avoid Trick Questions :**
  Questions should be designed so that students who know the material can find the correct answer. Questions designed to lead students to an incorrect answer, through misleading phrasing or by emphasizing an otherwise unimportant detail of the solution, violate this principle.
- **Avoid Negative Wording :**
  Students often fail to observe negative wording and it can confuse them. As a result, students who are familiar with the material often make mistakes on negatively worded questions. In general, avoid having any negatives in the stem or the options. In the rare cases where you use negatives be sure to emphasize the key words by putting them in upper case, and bolding or underlining them.
- **Avoid Double Negatives :**
  Don't use combinations of the words like not, no, nor, the -un prefix, etc in the same question.
- **Make the choices grammatically consistent with the stem :**
  Read the stem and each of the choices aloud to make sure that they are grammatically correct.

- **As far as possible, keep all answer choices of the same length :**
  This can be difficult to achieve, but expert test-takers can use answer length as a hint to the correct answer. Often the longest answer is the correct one. When one can't get all four answers to the same length, two short and two long can be used.

- **Place the choices in some meaningful order :**
  When possible, place the choices in numerical, chronological or conceptual order. A better structured question is easier to read and respond.

- **Randomly distribute the correct response :**
  The exam should have roughly the same number of correct answers that are a's, b's, c's and d's (assuming there are four choices per question).

- **Avoid using "all of the above"**
  If "all of the above " is an option and students know two of the options are correct, the answer must be "all of the above". If they know one is incorrect, the answer must not be "all of the above". A student may also read the first option, determine that it is correct, and be misled into choosing it without reading all of the options.

- **Avoid using "none of the above"**
  The option "none of the above" does not test whether the student knows the correct answer, but only that he/she knows the distracters aren't correct.

- **Refrain from using words such as always, never, all, or none :**
  Most students know that few things are universally true or false, so distracters with these words in them can often be easily dismissed.

- **Avoid overlapping choices :**
  Make the alternatives mutually exclusive. It should never be the case that if one of the distracters is true, another distractor must be true as well.

- **Avoid questions of the form "Which of the following statements is correct?"**
  There is no clear question being asked, and the choices are often heterogeneous. Such questions are better presented in the form of True/ False questions.

- **Instruct students to select the "best answer" rather than the "correct answer"**
  By doing this, you acknowledge the fact that the distracters may have an element of truth to them and discourage arguments from students who may argue that their answer is correct as well.

Designing Stems :

- **Express the full problem in the stem.**
  When creating the item, ask yourself if the students would be able to answer the question without looking at the options. This makes the purpose of the question clear.

- **Put all relevant material in the stem.**
  Do not repeat in each of the alternatives information that can be included in the stem. This makes options easier to read and understand, and makes it easier for students to answer the question quickly.

- **Eliminate excessive wording and irrelevant information from the stem.**
  Irrelevant information in the stem confuses students and leads them to waste time.

Designing Alternatives :

- **Limit the number of alternatives.**
  Use between three and five alternatives per question. Research shows that three choice items are about as effective as four or five-choice items, mainly because it is difficult to come up with plausible distracters.
- **Make sure there is only one best answer.**
  Avoid having two or more options that are correct, but where one is "more" correct than the others. The distracters should be incorrect answers to the question posed in the stem.

- **Make the distracters appealing and plausible.**
  All of the wrong answer choices should be completely reasonable. If the distracters are farfetched, students will too easily locate the correct answer, even if they have little knowledge. When testing for recognition of key terms and ideas keep the distractors similar in length and type of language as the correct solution. When testing conceptual understanding, distractors should represent common mistakes made by students.

b) Short Answer (SA) descriptive ……Marks as Applicable)

A short answer question as the term indicate is one to which a brief answer can be given. When the students are required to give a brief and precisely defined response, the suitable type is the restricted response questions. The specific form of the answer should also be indicated, e.g., List, Define, Give reason etc.

While framing a question requiring short answer it should be ensured that:

1. The statement constituting the question is simple, clear and unambiguous.
2. The scope of the answer is limited.
3. The direction given in the question is clear.
4. The question constitutes a valid testing situation for the ability under consideration
5. The question is likely to be interpreted in the same way by teachers/ students/ examiners.
6. The question does not require further restructuring.

c) Long Answers (LA) ……Marks as applicable)

Long Answer (LA) :

As the term indicates a long answer question is the one that needs a comprehensive explanation incorporating different ideas. The question should require the student to organize his ideas, choose the form of his answer and answer in his own words.

While framing a question requiring a long answer it should be ensured that:

1. The situation presented in the question is not new to most of the students.
2. The student will not be able to produce in the full, memorized answer.
3. The question involves the use of judgment on the part of student.
4. The answer can be completed within the limited time given.
5. The length and the scope of the answer is specified.

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Appendix- D

Instructions to the BOS

Curriculum / syllabus shall be modified/prepare for the courses/subjects prescribed as in CBCS direction.

The Programme Educational Objectives (PEOs), Program Outcomes (POs), Programme Specific Outcomes (PSOs) should be well defined.

For each course of the Program, learning objectives and learning outcomes: Course Outcomes (COs) should be defined carefully in accordance with Bloom's Taxonomy.

A comprehensive note on employability potential of the program should be added separately at the Preface/Preamble of the Program Curriculum

Bloom's hierarchy takes students through a process of synthesizing information that allows them to think critically. Students start with a piece of information and are motivated to ask questions and seek out answers.

Not only does Bloom's Taxonomy help teachers understand the process of learning, but it also provides more concrete guidance on how to create effective learning objectives.

Table No. 6. Bloom's Taxonomy

Bloom's Level	Key Verbs (keywords)	Example Learning Objective
Create	design, formulate, build, invent, create, compose, generate, derive, modify, develop.	*By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.*
Evaluate	choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate.	By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.
Analyze	classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, associate.	*By the end of this lesson, the student will be able to* differentiate between potential and kinetic energy.
Apply	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present.	*By the end of this lesson, the student will be able to* calculate the kinetic energy of a projectile.
Understand	describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss.	*By the end of this lesson, the student will be able to* describe Newton's three laws of motion to in her/his own words
Remember	list, recite, outline, define, name, match, quote, recall, identify, label, recognize.	*By the end of this lesson, the student will be able to* recite Newton's three laws of motion.

This also reminds teachers that learning is an active process, stressing the importance of including measurable verbs in the objectives. And the clear structure of the taxonomy itself emphasizes the importance of keeping learning objectives clear and concise as opposed to vague and abstract.

OBE (Outcome Based Education) starts with a clear statement on what Knowledge, Skills and Attitudes, the Student will be able to demonstrate as having acquired on successful completion of a program of study. These should be clearly measurable.

Program Educational Objectives (PEOs):

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

GRADUATE ATTRIBUTES

Knowledge :Graduates have comprehensive knowledge and understanding of their subject area, the ability to engage with different traditions of thought, and the ability to apply their knowledge in practice including in multi-disciplinary or multi-professional contexts.

Critical and Analytical Thinking :Graduates are effective problems-solvers, able to apply critical, creative and evidence-based thinking to conceive innovative responses to future challenges.

Communication : Graduates convey ideas and information effectively to a range of audiences for a variety of purposes and contribute in a positive and collaborative manner to achieving common goals.

Team Work, Leadership : Graduates engage in professional behaviour and have the potential to be entrepreneurial and take leadership roles in their chosen occupations or careers and communities.

Ethics : Graduates are responsible and effective global citizens whose personal values and practices are consistent with their roles as responsible members of society.

Digital Competencies :Graduates are well prepared for living, learning and working in a digital society.

Life Long Learning: Graduates are self-aware and reflective; they are flexible and resilient and have the capacity to accept and give constructive feedback; they act with integrity and take responsibility for their actions.

Program Outcomes (POs):

Program outcomes: Describe what students are expected to know and would be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program.

Program outcomes basically describe knowledge, skills and behavior of students as they progress through the program as well as by the time of graduation and must reflect all GAs (Graduate Attributes).

Program Specific Outcomes (PSOs):

Program Specific Outcomes are statements that describe what the graduates of a specific program should be able to do.

Course Outcomes (COs):

Statements indicating what a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course there may be 5 or 6 COs. The keywords used to define COs are based on Bloom's Taxonomy.

Typically 4-6 CO s should be identified /Course. COs are major domain specific outcomes written using action verbs which are specific, measurable and can be demonstrated by students on completion of the course. Course Outcomes should aim to develop higher order skills in each Domain of Learning. Evaluation, Synthesis, Analysis are typical examples in Cognitive Domain. Outcomes which can be mastered in a significantly lower no. of lessons are likely to be too trivial and more suitable for Unit or Module Outcomes. Attainment of each CO should lead to attainment of one or more PO s.

For the internal assessment & University end semester theory examinations, the paper should be set preferably from question bank. Hence question bank should be prepared.

Also Board of Studies shall prepare a question bank of MCQs from units of all subjects.

Curriculum/syllabus of concerned Generic Open Elective Courses (GOECs), General Interest Courses (GICs), skill courses and Modules shall be prepared by the respective BOS as prescribed in CBCS scheme.

Each BOS shall design SEM for each offered course/subject/paper except for GOEC and Environmental Science.

***

APPENDIX -E

Glossary of Terms

A. **Academic Year :** Academic year means academic activities of the University in a year (odd semester followed by even semester) as notified in the Academic Calendar.

B. **Semester :**It is a period of study comprising of 15 to 18 weeks of academic work equivalent to normally 90 teaching days. The odd semester may be scheduled from July to December and even semester from January to June.

C. **Programme / Programme of study** : Programme / Programme of study means a higher education programme pursued for a degree specified by the UGC under Section 22 (3) of the UGC Act;

D. **Course/Subject/Paper :** Course means one of the specified units which go to comprise a programme of study. It is referred to, as a 'paper' or 'subject' which is a component of a programme. All courses need not carry the same weight. A course may include but may not be limited to lectures / tutorials / laboratory work / field work /internship/ outreach activities / project work / vocational training / viva / seminars / term papers / assignments / presentations / dissertation/self-study etc. or a combination of these. Courses in a programme may include Core, Elective and Foundation.

i) **Ability Enhancement Courses (AEC) :** The Ability Enhancement Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). "AECC" courses are the courses based upon the content that leads to Knowledge enhancement. "SEC" courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

a. Communication Skills : Abilities used when giving and receiving different kinds of information. It involves verbal, non verbal, written, visual, listening, empathizing etc. and other means of expression.

b. Environmental Studies : Deals with every issue that affects an organism. It is essentially a multidisciplinary approach that brings about an appreciation of our natural world and human impacts on its integrity. It is an applied science as it seeks practical answers to making human civilization sustainable on the earth's finite resources. Its components include biology, geology, chemistry, physics, engineering, sociology, health, anthropology, economics, statistics, computers and philosophy.

ii) **Discipline Specific Core (DSC) Course:** There may be a Core Course in every semester. This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

iii) **Elective Course:** A course which can be chosen from pool of courses / papers and which may be very specific or specialized or advanced or supportive to the discipline / subject of study or which provides an extended scope or which enables an exposure to some other discipline / subject / domain or nurtures the students proficiency / skill is called an elective course.

An elective may be "Generic Elective" focusing on those courses which add generic proficiency to the students. An elective may be "Discipline centric" or may be chosen from an unrelated discipline. It may be called an "Open Elective."

iv) **Discipline Specific Elective (DSE) Course:** Elective courses offered under the main discipline/subject of study is referred to as Discipline Specific Elective. The University/Institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study). It is the specialized / emerging study area allied to the core subject.

v) **Generic Elective Course (GEC) :** An elective course chosen from an unrelated discipline/subject, with an intention to seek exposure beyond discipline/s of choice is called a Generic Elective. The purpose of this category of courses is to offer the students the option to explore disciplines of interest beyond the choices they make in Core and Discipline Specific Elective papers.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

vi) **Open Elective Course (OEC)** : The group of different choice based courses comprising of general interest courses related to discipline specific core (DSC) subjects or of interdisciplinary nature, MOOCs offered by different authorized agencies, open skill courses.

vii) **Generic Open Elective course (GOEC) :**The group of different important choice based courses (may be of interdisciplinary nature) related to the fundamental growth of students as a responsible citizen of India.

viii) **General Interest Course (GIC) :**General interest course is a course taken out of interest rather than for academic reasons. It may be chosen from different subjects / courses from the discipline or Inter-discipline and the curriculum of these courses shall be designed by respective College/Institute/University Department and approved by the respective BOS. The nature of these courses shall be of self-study nature under the guidance of teacher / mentor / faculty member concerned. The evaluation of these courses shall be done by teacher / mentor / faculty member concerned (may be in the form of assignment / written test / project etc.) and marks and grades shall be communicated to the University.

ix) **MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and following the four quadrant approach consisting of video, text, self assessment and learn more.

x) **Skill Enhancement Course (SEC) :**This course may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge and should contain both theory and lab/hands-on training/field work to increase employability of the students.

xi) **Project:** A course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a student studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project.

xii) **Research Project/Dissertation:** A course designed to acquire special / advanced knowledge/Research with an advisory support / guidance by a teacher / faculty member.

xiii) **Foundation Course:** The Foundation Courses may be of two kinds: Compulsory Foundation and Elective foundation. "Compulsory Foundation" courses are the courses based upon the content that leads to Knowledge enhancement. Elective Foundation courses are value-based and are aimed at man-making education.

xiv) **Skill Enhancement Module (SEM) :** The module is based on the application of the subjects Discipline Specific Core (DSC), Discipline Specific Elective (DSE), communication skills in English subjects to provide skills to the students for developing their employment / self-employment / entrepreneurship capabilities.

E. **Examinational Credits:** Examinational Credits allows a student to receive credit for learning by demonstrating mastery of course outcomes—skills and knowledge—by taking the course exam(s). Some exams may require performance of a skill set, while other exams may be written tests covering course content.

F. **Ancillary Credits :** credits earned by the students by participating in Sports / Extra-curricular Activities / Unnat Bharat Abhiyan / Internship / Field work / Work experience / Avishkar / Induction programme / NSS / NCC/ Cultural Activities / Inter University Academic Activities and other activities prescribed by the University from time to time but other than core or elective courses.

G. **Internship / Field Work / Work Experience :** The prescribed hours of practical / on field training related to any Discipline Specific Core (DSC)course with any Institute / Firm / Industry / Establishment as identified by College/Institute/University Department.

H. **Induction Programme:** A programme of prescribed duration specially designed for the first year / first semester students to make the students feel comfortable in their new environment, set a healthy daily routine, create bonding in the batch as well as between faculty members, develop awareness, sensitivity, self-exploration and understanding of society at large, and nature also to inculcate in them ethos and culture of the College/Institute/University Department.

I. **Activity:**

i) **Curricular Activity :** Activities relating to the subjects comprising a course of study in the College/Institution/University Departments

ii) **Co-curricular Activity :**Co-curricular refers to activities, programs and learning experience that complement in some way, what students are learning in College/Institution/University Departments. These activities are connected to the academic curriculum like Extension Activities, Debates, Quiz competition, seminars etc.

iii) **Extra-curricular Activity :** Extra-curricular takes place in addition/outside to regular curriculum including but not limited to Sports, Start-up, Hackathon, Avishkar, Students Exchange Program, Social Activities, Volunteering, NSS, NCC, Annual Gatherings, TRDEA (Teaching, Research, Development and Extension Activities etc.)

J. **Faculty member:** Faculty member means an individual qualified as per statutory Regulations, working on Full Time basis in an Institution/ University Department/College.

K. **Teacher :** Teacher means full time approved Professor, Associate Professor, Assistant Professor, Reader, Lecturer, Librarian, Principal, Director of institution, Director of Knowledge Resource Centre, Director of Centre of Lifelong Learning and Extension, Deputy and Assistant Librarian, in the University, College Librarian, Director or Instructor of physical Education in any University department, conducted, affiliated, or Autonomous College, Autonomous Institutions or Department or Recognized Institutions of the University**.**

L. **Student:** Student means an individual who is admitted and registered for an academic programme of the University or affiliated, Conducted, Autonomous Colleges, Recognized Institutions and Departments of the University.

M. **Inter-disciplinary Studies:** Inter-disciplinary studies mean the combined academic studies and research in different disciplines as prescribed.

N. **Multi-disciplinary Studies:** Multi-disciplinary studies mean the combined academic studies and research in different streams of a particular discipline as prescribed.

O. **Level:** Level means Diploma, Post Diploma Certificate, Under Graduate Degree, Post Graduate Diploma and Post Graduate Degree Programmes.

P. **Laboratory Work (Lab):** The skill course based on the practical related to any or more Discipline Specific Core (DSC) course / Discipline Specific Elective (DSE) course as prescribed in Teaching-Learning schemes.

Q. **MCQs:** Multiple Choice Questions based on any / all units of a particular course of the programme.

R. **Online Learning (OL)**: Online Learning mode means a mode of providing flexible learning opportunities by overcoming separation of teacher and learner using a variety of media, including print, electronic, MOOCs in a totally online mode.

S. **MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and following the four quadrant approach consisting of video, text, self assessment and learn more.

T. **SWAYAM:** SWAYAM is the indigenous platform of the MHRD, GOI providing an integrated portal and platform for hosting Massive Open Online Courses (MOOCS) developed under the aegis of NME-ICT. Government of India adopted the MOOCs concept to supplement the formal education system in the country from high school to higher education, named aptly as the “Study Webs of Active-Learning for Young Aspiring Minds” (SWAYAM). It hosts various courses based on curriculum, continuing education and skill.

U. **Credit :**Credit means the standard methodology of calculating one hour of theory, one hour of tutorial, two hours of laboratory work / practical work / field work per week for a duration of a semester resulting in the award of one credit which is awarded by College/Institute/University Department. Credit for internship shall be one credit per week of internship, subject to a maximum of six credits.

V. **Letter Grade:** It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P, F and Ab.

W. **Grade Point:** It is a numerical weight allotted to each letter grade on a 10-point scale.

X. **Credit Point:** it is the product of grade point and number of credits for a course.

Y. **Credit Grade Report:** It is a report showing cumulative performance of a student in a given semester of the academic program. It shall display maximum, minimum and total marks of a course as per the scheme of teaching, learning and examination, evaluation as well as it will show the obtained : marks, credits, grade points, letter grade, SGPA, CGPA, percentage of total marks, class/division, incentive marks, remarks, result, exemptions and also other requisite information as prescribed.

Z. **Semester Grade Point Average (SGPA):** It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

AA. **Cumulative Grade Point Average (CGPA):** It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

BB. **Transcript :** Transcript will display the program details like, all Semesters SGPA with details, Non-Examinational Credits with details as well as CGPA and Class/Division.

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Programme Specific Provision

26. There shall be six examinations leading to the Degree of Bachelor of Commerce, namely:

(i) B.Com. Part-I (Semester-I & II) at the end of the each semester;

(ii) B.Com. Part-II (Semester-III & IV) at the end of the each semester;

(iii) B.Com. Part-III (Semester-V & VI) at the end of the each semester.

27. Subject to his/her compliance with the provisions of this Direction and of other Ordinances enforced from time to time, an applicant–

For admission to B.Com. Part-I (Semester - I & II) programme candidate shall have-

(i) passed XII standard examination of the Maharashtra State Board of Secondary and Higher Secondary Education or any other statutory board, with English at Higher or Lower level and Modern Indian Languages at Higher or Lower level with any combination of optional subjects

OR.

XII standard examination of Maharashtra State Board of Secondary and Higher Secondary Education in Vocational Stream with one language only; or any other examination recognized as equivalent thereto; in such subjects and with such standards of attainments as may be prescribed;

OR

(ii) The students seeking admission for vocational subject under U.G.C. Scheme, shall be eligible who fulfill condition, besides the admission qualification laid down in Para 27 above.

Table 7. Eligibility for Admission, Examination and Promotion to Higher Classes

Sr. No.	Name of the Exam.	The student should have passed the examination of	The student should have completed the following session / term satisfactorily with minimum prescribed residence time	The student shall have earned /accumulate minimum
1	2	3	4	5
1	B.Com. Semester-I	As mentioned in Para 27	Semester-I	--
2	B.Com. Semester-II	--	Semester-II	--
3	B.Com. Semester-III	--	Semester-III	--
4	B.Com. Semester-IV	--	Semester-IV	--
5	B.Com. Semester-V		Semester-V	44 Credits for Semester- I and II together from all courses
6	B.Com. Semester-VI	--	Semester-VI	--

28. An examinee for the B.Com. Semester - I to VI examination shall be examined in the following subjects namely:-

(A) Discipline Specific Core (DSC):-

i) Compulsory English

ii) Any one of the following compulsory second languages namely

a) Marathi, Hindi, Urdu, Persian, Pali and Prakrit , Supplementary English

b) Other Indian Languages,

c) Classical Languages,

d) Other Foreign Languages

iii) Following shall be discipline specific core subjects, namely;

Semester-I :-1) Compulsory English, 2) Second Language, 3) Principle of Accountancy, 4) Principles of business Economics, 5) Computer Fundamentals and Operating System – I 6) Principal of Business Management

Semester-II :-1) Compulsory English, 2) Second Language, 3) Financial Accounting , 4) Business Economics, 5) Computer Fundamental and Operating System - II , 6) Principles of Business Organization

Semester-III :-1) Compulsory English, 2) Second Language, 3) Company Accounts, 4)Marketing Management 5) Auditing, 6) Indian Monitory System, 7) Information Technology & Business Data Processing -I

Semester-IV :-1) Compulsory English, 2) Second Language, 3) Corporate Accounts) Business Mathematics and Statistics, 5) Income Tax, 6) Indian financial System 7) Information Technology & Business Data Processing -II

Semester-V :-1) Compulsory English, 2) Second Language, 3) Cost Accounting, 4) Business Environment, 5) Business Regulatory Framework

Semester-VI :-1) Compulsory English, 2) Second Language, 3) Management Accounting, 4) Economics of Development, 5) Securities Management

(B) Discipline Specific Elective (DSE):-

Semester-V :-1) Any One Combination from the following :-

A) i) E-Commerce-I ii) Indian Banking System-I

B) i) Internet and WWW-I, ii) Indian Insurance System-I

C) i) Digital Marketing- I, ii) Logistic and Supply Chain's Management-I

Semester-VI :-1) Any One Combination from the following (that opted in semester V) :-

A) i) E-Commerce-II, ii) Indian Banking System-II

B) i) Internet and WWW-II, ii) Indian Insurance System-II

C) i) Digital Marketing –II, ii) Logistic and Supply Chain's Management-II

29. (i) The scope of the subjects shall be as indicated in the Syllabus.

(ii) The medium of instructions shall be Marathi or English or Hindi.

(iii)For non-language subjects, the question papers will be set in all three languages preferably from the question bank.

(iv) Examinee shall have option to write answer in Marathi or English or Hindi as per the medium of instruction selected at the time of admission to the programme.

30. **(a)**The student who has earned minimum 1 credits as prescribed for the award of the degree out of which minimum ---- credits from ancillary credit course as given in Table A shall be entitled to receive a credit Grade report signed by the Director, Examination & Evaluation.

(b) After passing the Bachelor of Commerce Part III (Semester-VI) Final Examination and satisfying other conditions as per Ordinance No. 19 and on payment of prescribed fee, the examinee will receive a Degree in the prescribed form signed by the Vice-Chancellor.

Further, on request & payment of the prescribed fees, the examinee shall receive a transcript signed by the Director, Examination & Evaluation. **The Degree will be awarded on the basis of CGPA.**

31. Successful examinees at the Bachelor of Commerce Final, Semester-VI Examination shall be placed in Class / Division as follows :**Equivalence of Class/Division to corresponding C.G.P.A.**

Sr. No.	C.G.P.A.	Class/Division
1	7.5 or more than 7.5	First Class with Distinction
2	6.00 or more but less than or equal to 7.49	First Class
3	5.50 or more but less than or equal to 5.99	Higher Second Class
4	5.00 or more but less than or equal to 5.49	Second Class
5	4.00 or more but less than or equal to 4.99	Pass

Note :- DSC, DSE and ancillary credits and grades there of shall be taken into account for computing CGPA.

32. The existing Ordinance No.147 and Directions No.51/2022 dated 15/09/2022 of the programme shall be repealed stage-wise and only applicable to the students who have already sought their admissions as per its provisions and shall repealed after exhausting the chances given to the failure students of old programme by the University. . Similarly, Direction No. 66/2022, dated 27/09/2022 has been repealed and replaced by this Direction, since as per the proviso 12(8) of the Maharashtra Public Universities Act, 2016 the Direction shall have to be converted into Statute, Ordinance or Regulation as the case may be within 6 months of issuing such Direction, failing which such Direction shall automatically lapsed.

Sd/-
(Dr.Pramod G. Yeole)
In-charge Vice-Chancellor,
Sant Gadge Baba Amravati University

Amravati
Dated : 11/10/2023

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Appendix- F

Bachelor of Commerce Full Time Three Years Degree Programme

1) A Student shall have to take admission every year in the respective Institute/ College for completion of an Academic Year of this three-year Degree programme.
2) The Bachelor of Commerce Degree shall consists of six semesters i.e. Semester I & II in the first Academic Year, Semester III & IV in the second Academic Year & Semester V & VI in the third academic year.
3) Student has to complete all six Semesters for the award of Degree of Bachelor of Commerce and should fulfill conditions as per Ordinance No. 19.
4) Every Semester of Bachelor of Commerce programme shall be of at least 90 teaching days in a semester and shall be of at least 180 teaching days in an Academic Year.
5) The examination in Bachelor of Commerce for each semester will be as given in Appendix Subject. Each theory paper will have maximum 80 marks and 20 marks for Internal Assessment. and 40 marks for Practical Examination. Minimum Passing Marks in theory paper will be 40% combine and separate passing for practical will be 50 % .
   For internal examination of 20 marks,based on SEM the concerned subject teacher/ faculty member shall asses the student on the following points
   1) Class attendance – 5 Marks,
   2) Unit test / seminar / assignments / study tour / media visit – 15 marks
6) An applicant for admission to an examination specified in Paragraph 5) shall prosecute a regular course of study in courses prescribed for the examination concerned for not less than one semester in a particular semester in a College affiliated to the University.
7) The Examinations shall consists of the subjects as indicated in the Scheme of Examinations as per **Annexure – 'A1 to A4.**

Sant Gadge Baba Amravati University Amravati **Annexure-A 1**

Scheme of teaching, learning &Examination leading to the Degree Bachelor of Commerce (Three Years - Six Semesters Degree Programme - C.B.C.S)

(B. Com Part-I) Semester- I

Sr. No	Subjects	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hours	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits				Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q External	Skill Enhancement Module Internal	Practical		Total Marks	Marks	Grade
													Internal	External			
1	English (DSC)	BC-11	04	-	-	04	03	-	03	03	60+20	20	-	-	100	40	p
2	Business Communication Skill in English (AEC)	BC-11		1	-	01	01	- -	01	-	-	-	25	-	25	10	p
3	LANG-II (DSC)	BC-12	**03**	**-**	**-**	03	2.5	-	2.5	**03**	60+20	20	-	-	100	40	p
4	Communication Skill in Language-II (AEC)	BC-12	**-**	**1**	**-**	01	01	- -	01	**-**	-	-	25	-	25	10	p
5	Principle Accounting (DSC)	BC-13	05	-	-	05	04	-	04	03	60+20	20	-	-	100	40	p
6	Principles of Business Economics (DSC)	BC-14	05	-	-	05	04	- -	04	03	60+20	20	-	-	100	40	P
7	Principles of Business Management (DSC)	BC-15	04	-	-	04	03	-	03	03	60+20	20	-	-	100	40	P
8	Computer Fundamental & Operating System (DSC)	BC-16	03	-	-	03	2.5	-	2.5	03	40+20	--	-	-	60	24	P
9	Computer Fundamental & Operating System	BC-16	-	-	1	01	-	01	01	-	-	-	40	-	40	20	P
10	Generic Open Elective Course (GOEC)	BC-17	02	-	-	02	02	-	02	College Level Evaluation					50	20	P
11	Induction Programme*	30 Hrs (one Week) at the beginning of semester I only							01*								
	Total					29			24+1*						700		

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till V semester in vacations for minimum 120 hrs. It's credits and grades will be reflected in final semester VI credit grade report. - OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

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Sant Gadge Baba Amravati University Amravati **Annexure-A2**

Scheme of teaching, learning &Examination leading to the Degree Bachelor of Commerce (Three Years - Six Semesters Degree Programme - C.B.C.S)

(B. Com Part-I) Semester-II

Sr. No	Subjects	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hours	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits				Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q External	Skill Enhancement Module Internal	Practical		Total Marks	Marks	Grade
													Internal	External			
1	**English (DSC)**	BC-21	04	-	-	04	03	--	03	03	60+20	20	-	-	100	40	p
2	**Business Communication Skill in English (AEC)**	BC-21	-	1	-	01	01	-	01	-	-	--	25	15	25	10	p
3	**LANG-II (DSC)**	BC-22	**03**	**-**	**-**	03	2.5	-	2.5	**03**	60+20	20	-	-	100	40	p
4	**Communication Skill in LANG-II (AEC)**	BC-22	**-**	**1**	**-**	01	01	- -	01	**-**	--	-	25	15	25	10	p
5	**Financial Accounting (DSC)**	BC-23	**05**	**-**	**-**	05	04	-	04	**03**	60+20	20	---	----	100	40	p
6	**Business Economics (DSC)**	BC-24	**05**	**-**	**-**	05	04	-	04	**03**	60+20	20	--	--	100	40	p
7	**Principles of Business Organisation (DSC)**	BC-25	**04**	**-**	**-**	04	03	-	03	**03**	60+20	20	-	-	100	40	p
8	**Computer Fundamental Operating System**	BC-26	**03**	**-**	**-**	03	2.5	-	2.5	**03**	40+20	-	-	-	60	24	p
9	**Computer Fundamental & Operating System I**	BC-26	**-**	**-**	**1**	01	--	--	01	**--**	--	--	40	--	40	20	p
10	**Generic Open Elective II- GOEC)**	BC-27	2	-	-	2	2	--	2	College Level Evaluation					50	20	p
	Total					29			24						700		

L: Lecture, T: Tutorial, P: Practical

Scheme of teaching, learning &Examination leading to the Degree Bachelor of Commerce (Three Years ... Six Semesters Degree Course- C.B.C.S)

(B. Com Part-II)

Semester- III

Sr. No	Subjects	Subject Code	Teaching & Learning Scheme							Duration of Exams Hrs.	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits				Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q External	Skill Enhancement Module Internal	Practical Internal	Practical External	Total Marks	Marks	Grade
1	English (DSC)	BC-31	03	-	-	03	02	--	02	03	30+10	10	-	-	50	20	p
2	LANG-II (DSC)	BC-32	02	-	-	02	02	-	02	03	30+10	10	-	-	50	20	p
3	Company Account (DSC)	BC-33	05	-	-	05	04	-	04	03	60+20	20	---	----	100	40	p
4	Marketing Management (DSC)	BC-34	05	-	-	05	04	-	04	03	60+20	20	--	--	100	40	p
5	Auditing (DSC)	BC-35	05	-	-	05	04	-	04	03	60+20	20	-	-	100	40	p
6	Indian Monitory System (DSC)	BC-36	05	-	-	05	04	-	04	03	60+20	20	-	-	100	40	p
7	ITBDP-I (DSC)	BC-37	03	-	-	03	03	-	03	03	40+20	-	-	-	60	24	p
8	ITBDP-I (DSC)(Practical)	BC-37	-	-	2	02	--	01	01	--	--	--	40	--	40	20	p
9	Environmental Studies (AEC)	BC-38	2	-	-	2	2	--	2	College Level Evaluation					--	--	
	Total					32			26						600		

L: Lecture, T: Tutorial, P: Practical

Sant Gadge Baba Amravati University Amravati **Annexure-A 4**

Scheme of teaching, learning &Examination leading to the Degree Bachelor of Commerce (Three Years ... Six Semesters Degree Course- C.B.C.S)

(B. Com Part-II)

Semester- IV

Sr. No	Subjects	Subject Code	Teaching & Learning Scheme							Duration of Exams Hrs.	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits				Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q External	Skill Enhancement Module Internal	Practical Internal	Practical External	Total Marks	Marks	Grade
1	**English (DSC)**	BC-41	03	-	-	03	02	--	02	03	30+10	10	-	-	50	20	p
2	**LANG-II (DSC)**	BC-42	**02**	**-**	**-**	02	02	-	02	**03**	30+10	10	-	-	50	20	p
3	**Corporate Account (DSC)**	BC-43	**05**	**-**	**-**	05	04	-	04	**03**	60+20	20	---	----	100	40	p
4	**Business Mathematics and Statistics (DSC)**	BC-44	**05**	**-**	**-**	05	04	-	04	**03**	60+20	20	--	--	100	40	p
5	**Income Tax (DSC)**	BC-45	**05**	**-**	**-**	05	04	-	04	**03**	60+20	20	-	-	100	40	p
6	**Indian Financial System (DSC)**	BC-46	**05**	**-**	**-**	05	04	-	04	**03**	60+20	20	-	-	100	40	p
7	**ITBDP-II (DSC)**	BC-47	**03**	**-**	**-**	03	03	-	03	**03**	40+20	-	-	-	60	24	p
8	**ITBDP-II (DSC) (Practical)**	BC-47	**-**	**-**	**2**	02	--	01	01	**--**	--	--	40	--	40	20	p
9	**Environmental Studies (AEC)**	BC-48	2	-	-	2	2	--	2	03	70	--	--	30	100	40	
	Total					32			26						700		

Appendix - G

Examination and question pattern of B.Com. Degree Programme:-

1) An examinations shall be held at the end of each semester.

2) Question paper of examination shall be in English, Marathi and Hindi as applicable.

3) The question bank for theory/subject/paper (MCQ, Long answer, short answer, problems or numerical, computations, design as applicable) except case study should be prepared along with memorandum and solutions of problem.

4)Syllabi of respective papers have been divided in to five units for each paper/subject.

5)Weightage shall be equal for each unit of the respective paper/subject.

6) All questions in the question paper shall be compulsory.

7) The theory paper shall be of 40 or 80 marks as per the prescribed scheme of Examination and Evaluation.

8)For the theory paper consisting 5 of units :

i) Multiple Choice questions (MCQ): The end semester university question paper shall be set based on 5 units (excluding SEM unit). The SEM unit will be internally assessed. Each theory subject/paper shall contain 20 MCQs uniformly distributed over all the 5 units with 4 MCQs from each unit and each MCQ shall carry 1 (one) mark M.C.Qs. &OMR sheet shall be provided by the University.

ii) Short questions: There shall be 5 short answer type questions with internal choice, having weightage of 4 marks to each question. (1 question from each unit except SEM with internal choice).

iii) Long questions: There shall be 5 long answer type questions with internal choice, having weightage of 8 marks to each question. (1 question from each unit except SEM with internal choice.)

iv) Problem solving/Computational/Design (wherever applicable): There shall be short or long questions (ii or iii as above) as per the requirement.

v) Case study based questions (wherever applicable) :There shall be short or long questions (ii or iii as above) as per the requirement.

9) There shall be internal assessment of Skill Enhancement Module (SEM) of 10 or 20 marks as per the scheme of Examination & Evaluation.

10) Criteria for internal assessment of SEM :-These modules will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion etc. Study tour, MCQ, Open Book exam (OBE) etc. Marks shall be sent in the format prescribed by the university from time to time.

11) The papers Generic Open Elective Course (GOEC) I & II: each paper shall contain 25 MCQs having weightage of 2 Marks for each question. M.C.Q. shall be provided by the University through Question Bank and OMR Sheet shall also be provided by the university.

12) There shall be three Sections in every question paper i.e. Section ‘A’ Section ‘B’ and Section ‘C’

13) Section – ‘A’ shall consists of 20 multiple choice questions having weightage of 1 mark to each question but 4 M.C.Q. from each unit (except SEM).

14) Section – ‘B’ consists of 5 short answer type (numerical/problem solving/computational wherever applicable) questions with internal choice having weightage of 4 marks to each question and 1 question from each unit (except SEM) with internal choice.

15) Section – ‘C’ consists of 5 long answer type (numerical/problem solving/computational wherever applicable) questions having weightage of 8 marks to each question with internal choice and 1 question from each unit (except SEM) with internal choice.

16) Those theory papers (language papers) having 40 marks, their questions paper shall be set as (10 MCQs of 1 mark each, 4 short answer type questions of 3 marks each and out of 4 long answer type questions, two questions shall carry 4 marks each and remaining two shall carry 5 marks each.

17) In the practical subject there shall be Section A for MCQ & Section B for Long answer type (numerical/problem solving/computational/case study wherever applicable) questions.

18) The course teacher / faculty member shall design Rubrics for each Internal Evaluation of Skill Enhancement Module (SEM). Rubrics are scoring tools that define performance expectations for learners. The course teacher shall seek approval for the Rubrics from the Principal/ Director/ Head of the Department/ other designated academic authority of the College/Institute/University Department. The course teacher / faculty member shall share the approved Rubrics with the students at the start of the course. The Rubrics shall have the following details.

a) Linkages of the Internal Evaluation to COs (Course Outcomes).
b) A description of the assignment - brief concepts note.
c) Criteria that will be assessed - the expected learning outcomes.
d) Descriptions of what is expected for each assessment component - the expectation from student.
e) Substantive description of the expected performance level indicating mastering of various component - the assessment criteria.
f) The team composition, if applicable.
g) The format and mode of submission, submission timelines
h) Any other relevant details.

DIRECTION

No. : 84/2023. Date :- 14/12//2023

Subject : Examinations leading to the Degree of Bachelor of Science (B.Sc.) विज्ञान स्नातक **Three years – Six Semester Under Graduate Degree Course) under Choice Based Credit System Direction, 2023.**

Whereas, the Ordinance No. 143 & Direction No.21 of 2023 dated 20/04/2023 with respect to an examination leading to the Degree of Bachelor of Science) विज्ञान स्नातक Three years – Annual Pattern Under Graduate Degree Course and Three Years – Six Semesters under are in existence in the University,

AND

Whereas, the Direction No. 16/2010, dated 11/06/2010 along with the corrigendum issued time to time vide Direction No. 37/2011 dated 26/07/2011, 01/2012 dated 23/01/2012, 05/2015 dated 03/07/2015, 15/2015 dated 24/09/2015 with respect to an examination leading to the Degree of Bachelor of Science) विज्ञान स्नातक Three years – Six Semester Under Graduate Degree Course under Semester Pattern are in existence in the University,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(c) provides for Choice Based Credit System for all certificates, diplomas, Degrees, post-graduate programmes and other academic distinctions,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(v) for states that the Academic Council has to create policy, procedure and practice for Choice Based Credit System for all Academic programmes,

AND

Whereas, Maharashtra Public Universities Act, 2016 under section 33(y) provides the research projects are an integral part of Choice Based modules for post-graduate programmes,

AND

Whereas, while considering Item No.32 of Academic Council dated 15/11/2018, Dr. A.B. Marathe, member of Academic Council proposed to implement Choice Based Credit System for first year from Academic Session 2018-2019 and progressively up to final year,

AND

Whereas, while considering the proposal of Dr. A.B. Marathe, the Academic council has constituted a Committee No 01/2018,

AND

Whereas, while considering the recommendations of the Committee No 01/2018, Academic Council in its meeting dated 13/01/2020 vide Item No. 17 has constituted a Committee No. 02/2020 under the Chairmanship of Pro Vice-Chancellor,

AND

Whereas, the recommendations of Committee No.02/2020 had been placed before the meeting of the Academic Council dated 04/12/2020 vide Item No.72,

AND

Whereas, while considering the recommendations of the committee No.02/2020 vide Item No.72 along with the Scheme of Choice Based Credit System, Academic Council resolved to implement Choice Based Credit System from Academic Year 2021-2022,

AND

Whereas, it was necessary to frame the draft provisions of Direction/Ordinance for Choice Based Credit System, matter is placed before the Committee No.02/2020 and the same Committee No.02/2020 had constituted faculty wise Sub Committees under the Chairmanship of the respective Dean of the Faculty,

AND

Whereas, the Academic Council in its meeting dated 13/10/2021 vide Item No. 12 has reconsidered the above resolution regarding implementation of the Choice Based Credit System, and resolved to implement it from the Academic Session 2022-2023,

AND

Whereas, the recommendations of the Faculty wise sub committees were placed before the Committee No.02/2020 in its first online meeting dated 24/01/2022, and there after the series of meetings were held on 02/02/2022, 03/02/2022, 08/02/2022, 10/02/2022 and 12/02/2022,

AND

Whereas, above recommendations of Committee No. 02/2020 pertaining to the programmes of Bachelor of Science (B.Sc.) Three years- Six Semester Under Graduate Degree Course, were placed before the meeting of the Faculty of Science & Technology in its meeting dated 07/03/2022 and recommend to Academic Council,

AND

Whereas, the Academic Council while considering the recommendations of the Faculty of Science & Technology vide item no. 50 approved the Scheme of Teaching, Learning, examination and evaluation along with Draft Provisions of Direction/Ordinance,

AND

Whereas, the respective Board of Studies under the Faculty of Science & Technology in its meeting dated 03/6/2022 and 04/06/2022 framed Draft syllabi by taking into consideration the Scheme of Teaching, Learning,

examination and evaluation along with Draft Provisions of Direction/Ordinance of Choice Based Credit System,

AND

Whereas, the Draft syllabi framed by the various Board of Studies under the Faculty of Science & Technology were placed before the online emergent meeting of Faculty of Science & Technology dated 28/07/2022, and faculty accepted and recommended the draft syllabi to Academic Council.

AND

Whereas, the minutes of the Faculty Science &Technology in its online emergent meeting dated 28/07/2022 along with draft syllabus were approved by Hon'ble Vice-Chancellor under section 12(7) of Maharashtra Public Universities Act, 2016 on behalf of Academic Council,

AND

Whereas , the revised Direction No.21 of 2023 issued on dated 20.04.2023 has been lapsed on the expiry of sixth month as per M.P.U Act 2016, and it is necessary to issue a fresh direction with some addition regarding teaching periods as shown in Appendix-F in this regard,

AND

Whereas, the proviso of sub section (8) of section 12 of M.P.U Act 2016 provides that such direction is to be converted into related statutory forms within six months and failing which such direction shall be automatically lapsed,

AND

Whereas, the Scheme of Teaching, Learning, Examination and Evaluation of Semester III and IV of B.Sc. (with Mathematics) (and Excluding Mathematics) are given by the concerned Board of Studies and they are recommended by the Faculty of Science and Technology and approved by the Academic Council,

AND

Whereas making an Ordinance/Regulation is a time consuming process.

Now, therefore I, Professor Dr. Pramod Yeole, In-Charge Vice-Chancellor, Sant Gadge Baba Amravati University, Amravati in exercise of powers conferred upon me under Sub-section (8) of Section 12 of the Maharashtra Public Universities Act, 2016 do hereby direct as under :-

1. (i)This Direction may be called, "Examinations leading to the Degree of Bachelor of Science (B.Sc.) विज्ञान स्नातकThree years – Six Semester Under Graduate Degree Course) under Choice Based Credit System Direction, 2023.
   ii)The Degree of Bachelor of Science (B.Sc.) shall belong to the Faculty of Science and Technology.
2. This Direction shall come into force from the Academic Session as follows :-
   i) Semester I and II – from the Academic Session 2022-2023.
   ii) Semester III and IV – from the Academic Session 2023-2024.
   iii) Semester V and VI – from the Academic Session 2024-2025.
3. The provisions of directions, eligibility criteria and other details are as follows and the Scheme of Teaching, Learning, Examination and Evaluation of semester – I & semester-II is appended herewith vide Annexure – A1 to A6 (Annexure A1 and A2 for B.Sc. (Mathematics) Semester I and II, & A3 and A4 for B.Sc. programmes excluding Mathematics, Semester I and II and A5 and A6 for B.Sc. Semester III and IV.

Common Provisions

4. In this Direction unless context otherwise requires –

Definitions:

Choice Based Credit System (CBCS):-Choice Based Credit System means the curricular system that offers multiple Inter-disciplinary choices for students to select from the courses (core elective or minor or soft skill coursers) to accumulate credits;

Any other word and expression used herein and not defined but defined in *pari materia* such as the Maharashtra Public Universities Act, 2016, Directions and UGC regulations shall have the same meaning as assigned to them in the said enactments.

5. As per the scheme of teaching, learning, examination and evaluation, theory/practical examinations of Semester-I, II, III, IV, V & VI shall be conducted by the University (except for, SEM, GOEC, Third Semester Environmental Science & ancillary credit courses) at the end of each semester.

The theory/practical examinations of all the Semesters shall be held as per the following schedule:-

Table 1

Sr. No.	Name of the Examination	Main Examination	Supplementary Examination
1	Semester-I , III & V	Winter	Summer
2	Semester-II, IV & VI	Summer	Winter

6. The practical examination of all semesters shall be conducted by the University as prescribed. Practical examination of all the add-on papers of all semesters will be conducted by the College/Institution/University Department.
7. The examinations specified in Para 26 shall be held twice in a year at such places and on such dates as may be prescribed by the University.
8. An applicant to an examination specified in Para 26 shall pursue a regular course of study in courses prescribed for the examination concerned for not less than one semester in a particular semester in a College/Institute/University Department.

   Provided that the student shall be eligible to appear for examination if,

   a. he/she satisfies the conditions in the table and the provisions there under.
   b. he/she complies with the provisions of the Ordinance pertaining to the Examination in general from time to time.
   c. he/she has prosecuted a regular course of study in a University Department/College affiliated to the University.
   d. he/she has in the opinion of the Principal shown satisfactory progress in his/her studies.

9. Without prejudice to the provisions of Ordinance No.6 shall be applicable in *mutatis-mutandis* to every collegiate/non-collegiate student.
10. The fees for each theory examination and practical examination conducted by the University shall be as prescribed by the University, from time to time.

(A)Ability Enhancement Course :- (AEC)

1) Languages (Communication Skills) -There shall be a compulsory course of Communication Skills in English and Second Language for all students in Semester I and II as specified in the scheme of Teaching Learning Evaluation and Examination of various programmes .

2) Environment Studies: There shall be a Compulsory course titled **Environment Studies** for Semester-III and Semester-IV for all the students.

- There shall be two periods /week for this subject. There will be internal evaluation on the basis of any one or more techniques such as survey report, visit report, assignments, seminar presentations, test, open book test etc. during third semester and student will earn 2 Credits as other credit courses (as shown in Table A) for studying this subject in third semester. The college/university department shall send the credits earned by the student before start of third semester examinations to the University. It will be reflected in 3rd semester credit grade report.
- The Examination of this subject shall be conducted at the end of IV Semester. There shall be a Theory examination of 70 marks and Project Report/ Internal Work/ Survey shall be of 30 marks. The total marks for this subject shall be 100. The students will earn 2 exam credits which will be reflected in fourth semester credit grade report.

(B) Skills Enhancement Module (SEM):-

There shall be skill enhancement module in each Course of DSC, DSE.

These skill modules shall have 20% weightage in the total curriculum of every subject/paper/course for every semester except GOEC and environment studies. These skill modules shall be based on Learning Outcome of the course. These modules shall be used for continuous evaluation of the students. These modules will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion, Study tour, MCQ, Open Book exam (OBE), etc. Marks shall be sent in the format prescribed by the University from time to time.

(C)Generic Open Elective Course :-(GOEC) 1 & 2

There shall be a course as Generic Elective I & II for the semester I and II respectively.

There will be internal assessment examination of 50 marks each for this subject (I and II). There shall be two periods /week for this course for all the students. This course will be College Level Evaluation **Course**. The evaluation of this course shall be conducted by the college at the end of each semester and the marks, credits, grade shall be communicated to the university before the start of examination.

These courses shall be as designed by the University. These courses can also be additionally provided to the students by the college as per their distinctive specialized courses after approval from the University. Some proposed courses are as follows..

A) Gender Sensitization

B) Bharat Shodh

C) Communication Skill

D) Indian Constitution

E) Personality Development & Soft skill components etc.

F) Library and information resources

G) Universal Human Values:-Understanding Harmony

H) NCC Studies

I) Intellectual Property Rights (I.P.R.)

J) Disaster Management

K) Swachha Bharat Summer Internship Programme

L) Jeevan Koushalya Shikshan (जीवन कौशल्य शिक्षण)

M) Van, Mrud, Jal Saksharata, Vishayak Babi (वन, मृद, जल साक्षरताविषयक बाबी)

N) Bal Adhikar Sanrakshan (बाल अधिकार संरक्षण)

O) Hindi Bhasha Samvardhan (हिंदी भाषा संवर्धन)

P) Case Study

Q) Artificial Intelligence Technology

R) Block Chain

S) Bhartiya Nivadnuka Ani Matdar Jagruti Karyakram (भारतीय निवडणुका आणि मतदार जागृती कार्यक्रम)

T) Skill courses approved by Sector Skill Councils (SSC) & National Skill Development Council (NSDC) with due endorsement from the University

U) Specialised Generic (Open) Skill Courses (These courses may be designed by the College/ Institute/University Department considering the local needs. After approval from the University, these courses may be offered to the students.

Further, additional courses can be suggested by the respective Boards of Studies subject to the condition that GOEC should not be repeated from DSC, DSE & AEC

11. Ancillary Credit Courses

Induction programme :- (Semester- I)

(A) Induction Programme shall be undertaken by the College/Institute/University Department and offered to students as prescribed by the University from time to time. This course shall be organised for I Year Semester-I Students only at the beginning of the semester. It shall be evaluated on basis of 1 credit for 30 hours of Induction programme of one week. The Credit of the Induction Programme will be reflected in the Credit Grade Report of 1st Semester.

(B) **Internship/Apprenticeship/ Field Work/ Work Experience :- (S**emester- II to V)

There shall be Internship/Apprenticeship/ Field Work/ Work Experience during vacation for duration of 120 hours available to all the students, to be completed during Semester-II to V.

This will carry 04 Credits for learning of 120 hours. It should be evaluated by mentor teacher / faculty member with the help of Work Report certified by trainer where Internship/Apprenticeship/ Field Work/ Work Experience is taken and as submitted by students. It shall be completed in vacation only. The tasks to be undertaken under this component are elaborated below and students may opt for any one of these categories. The Credits of Internship/Apprenticeship/ Field Work/ Work Experience shall be reflected in the Credit Grade Report of sixth Semester. The grade and credits obtained by the students should be communicated to the University by the College/Institution/University Department before the start of VI semester examination.

i) **Internship/ Apprenticeship :**Internship/ Apprenticeship preferably of 120 hours in the Academic Institutes of National Importance or Research Laboratories or Institutes or Industries or companies or firms identified by the College/ Institute/University Department. The participation shall be duly certified by identified Internship / Apprenticeship provider which is to be verified by the Principal/Director/HOD/Mentor teacher / faculty member of the College/Institute/University Department.

ii) **Field Work:** Students can undertake fieldwork for duration preferably of 120 hours related to their subject in a broad sense. This fieldwork shall be identified by the College/Institute/University Department and to be certified by the field work organiser and verified by Principal/Director/HOD/Mentor teacher/ faculty member of the College/Institute/University Department.

iii) **Work Experience:** Work experience for duration preferably of 120 hours includes students participating in the regular work of any Firm/Company/Industry/Organisation/ Institute/ Local Body identified by the College/Institute/University Department related to their learning subject and verified by Principal/Director/HOD/ the mentor / concerned teacher / faculty members of the College/Institute/University Department.

(D) Open Elective Course (OEC) may be opted from Semester I to Semester VI:-

There shall be Open Elective Course for the students. This will include the following types of courses. Students can select one or more of these courses. These courses shall be of Intra-disciplinary as well as Inter-disciplinary nature. Students can earn cumulatively maximum 5 Credits in this course.

i) General Interest Course (GIC):-General Interest Courses shall be from different programmes/disciplines and the curriculum of these courses shall be as prescribed by the University. This course will be evaluated by the concerned teacher / faculty member at the college level and the Credit shall be communicated to the University before the start of VI semester examination. If the concerned subject teacher / faculty member/ mentor / guide is from the College/Institute / other than the College / Institute / University Department where the student has taken admission to pursue regular course of study, then the credit earned by the student should be submitted by the teacher / faculty member / mentor / guide through the Principal of the parent institute. In such cases, the consent from the Principal of Parent Institute and the concerned teacher/ faculty member / mentor / guide should be obtained by the student before commencement of the course. The student may opt any course of any other discipline /faculty of his/her interest as GIC. The nature of these courses shall be self study under the guidance of concerned teacher/ mentor/ faculty member/guide.

ii) Skill Course:-The students will be offered Skill Courses. The courses shall be designed by respective Boards of Studies or by concerned Sector Skill Council / National Skill Development Councils (NSDC).The Skill courses may be designed by the Colleges / Institutes/University Departments and after approval of the University it may be offered to the students. This course will be evaluated by the concerned teacher / faculty member at the college level and the credit shall be communicated to the University before the start of VI semester examination. For the skill courses opted from Sector Skill Council (SSC) or NSDC, the evaluation may be done by respective council & the credit shall be communicated to the University before the start of VI Semester examination.

iii) MOOC :-The students may opt MOOC courses identified by the teacher/mentor/faculty member and maximum 5 credits may be earned by the students after successful completion of these MOOC courses with a minimum 75 hours of course for on different online training platforms. The concerned teacher / faculty member shall act as a mentor and based on the students' performance in the course, the teacher/mentor/faculty member shall award Credits in accordance with the Marks/Grades given by SWAYAM etc. After mapping with University grading system (given separately with exam scheme), the College/Institution/University Department shall communicate them to the university before the start of VI Semester examination. College/Institute/University Department can develop MOOC related to their concerned subject and after the approval of the University, these courses may be offered to the students. These courses shall be of Intra- disciplinary as well as Inter-disciplinary nature.

(E) Extra-curricular and co-curricular activities :- (In all semesters)

The students may earn maximum cumulative 5 credits from the activities as given in Table No. 2, 3 & 4 after securing rank/ participation at College / University /State/ Zone/ National / International level events. These credits shall be transferred in option to Open Elective Course (OEC) so that these performers shall be given relaxation from undertaking this course. These credits can be earned during the entire degree course period but before the start of VI Semester examination. These credits will be reflected in the final semester Grade Report. The mentor/ concerned teacher/faculty member shall award the Credits to the student based on his/her performance and College / Institution/University Department shall communicate these to the University as given in Table No. 2, 3 and 4.

Table No. 2

Comprehensive Credit Distribution

S. N.	Activities	Credits at Levels						Grade point	Minimum passing grade
		College	University - sity	State	Zone, if exist	National	International if exist		
1	Unnat Bharat Abhiyan[UBA]	1	2	3	4	5	6	4	P
2	Sports activities (see table no. 3)	1	1 / 2	2 / 3	3 / 4	4 / 5	5 / 6	4	P
3	Cultural activities	1	2	3	4	5	6	4	P
4	N.S.S. activities Camps	1	2	3	4	5	6	4	P
5	Academic activities like review paper presentations, Aavishkar, start-up, Hackathon, Quiz competitions, other curricular, co-curricular activities, students exchange programme etc. Research Paper published/presented	1 --	2 1	3 2	4 -	5 4	6 6	**4** **4**	**P** **p**
6	**Participation in Summer school/ Winter School / Short term course** (not less than 30 hours 1 or 2 weeks duration) (not less than 60 hours 2 or 3 weeks duration) **Scientific Surveys, Societal Surveys** **Field Visits, Study tours, Industrial Visits,**	2 Credits 4 Credits 2 Credits 1 Credit						**4**	**P**
7	NCC activities	**As given in Table-4**							

Table No. 3

Credit Distribution for Sports

Sr. No.	Particulars of Sports Status (Individual/ Team)	Credits	Credit Point	Passing Grade
1	College Level Participation	1	4	P
2	University Level Participation	1	4	P
3	University Level Rank 1, 2, 3	2	4	P
4	State Level Participation	2	4	P
5	State Level Rank 1, 2, 3	3	4	P
6	Zonal Level Participation	3	4	P
7	Zonal Level Rank 1, 2, 3	4	4	P
8	National Level Participation	4	4	P
9	National Level Rank 1, 2, 3	5	4	P
10	International Level Participation	5	4	P
11	International Level 1,2,3	6	4	P

Table No. 4

Credit Distribution for NCC activities

Sr. No.	Particulars of NCC Activities	Credits	Credit Point	Passing Grade
1	Participation in NCC activities	1	4	P
2	'B' Certificate obtained	2	4	P
3	'C' Certificate obtained	3	4	P
4	State Level Participation	4	4	P
5	National level Participation	5	4	P
6	International Level Participation	6	4	P

12. In the Scheme of Teaching, learning, Evaluation & Examination, credits are to be given with the maximum marks allotted to the Semester Examination in each paper for the theory and the practical of each of the six examinations. Also Computation of SGPA and CGPA, letter grades and grade point, equivalence of class/ division to corresponding CGPA shall be indicated as given in Appendix B.
13. The system of evaluation will be as follows:

    Theory papers, practicals and internal assessment will be evaluated in terms of marks. The marks will be added together and then converted into a grade and later a grade point average. Results will be declared for each semester and the final examination will give total grades and grade point average
14. The computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) of an examinee of under graduate course shall be as given in Appendix B.
15. Provisions of Ordinance No. 18/2001 in respect of an Ordinance to provide grace marks for passing in a Head of passing and Improvement of Division (Higher Class) and getting Distinction in the subject and condonation of deficiency of marks in a subject shall apply to the examination under this Direction.
16. An unsuccessful examinee at any of the above examination shall carry college assessment marks (Sessional Marks) of the theory/Practical examination to the successive attempt at the examination. The examinee however can go for his/her college assessment marks in the subject or subjects in which he/she shall be examined for total marks comprising of theory and sessional together at his/her successive attempts.
17. As per Maharashtra Public Universities Act, 2016, Section 89 Chapter VIII, the results of every examination and evaluation conducted by the University will be declared within thirty days from the last date of examination for that particular course and in any case declare the results latest within forty five days. The names of the examinees passing the examination as a whole in the minimum prescribed period and obtaining the prescribed number of places in the CGPA shall be arranged in order of merit as provided in the examination in general Ordinance No.6 provided that the merit list only be published in summer examination.
18. Subject to provisions in other Ordinances, Directions , no person shall be admitted to an examination under this Direction, if he / she has already passed the same examination of this university or an equivalent examination of any other University.
19. An examinee who has completed the term satisfactorily but fails to present himself/herself for the examination shall be eligible for readmission to the same examination, on payment of fresh fees and other fees as may be prescribed by the university from time to time.
20. A Student who could not complete a semester satisfactorily or did not keep term will be eligible for readmission to the same semester. However, readmission to the semester should be allowed only in regular session of that semester. In such case, the candidate will not be eligible to get admission in higher semester.
21. A candidate/student who has successfully completed all requisite courses approved by the university and earned minimum prescribed total credits for which he/she is admitted for the under graduate degree programme and accumulated the required credits for the program and who has put in the minimum residence time prescribed for each semester of the program shall be eligible to receive the degree.
22. Examinations will be conducted in Offline mode in accordance with Ordinance No. 9. However, under special circumstances and in specific cases, those can be conducted in Online mode on the recommendations of Board of Examination & Evaluation and approval by the Academic Council.
23. Generally and preferably College / Institute internal assessment examinations & University examinations papers should be set from the Question Bank prepared by the University.

24. Power to modify and remove difficulties :-

    a) Notwithstanding anything contained in the foregoing, Hon'ble Vice-Chancellor in consultation with the Dean of the faculty shall have the power to issue directions or orders to remove any difficulty,
    b) Nothing in the foregoing may be construed as limiting the power of the University to amend, modify or repeal any all of the above.

25. **CBCS Working Committee** :-

A) University Level :-

There shall be a CBCS working committee in the University comprising of the following members

1. Vice-Chancellor - Chairman
2. Pro-Vice Chancellor - Member
3. Deans of all faculties - Members
4. Two Experts not below the rank of Professor nominated by Hon'ble Vice-Chancellor - Member
5. Concerned Head of the Department - Member
6. Deputy Registrar (Academic) - Member-secretary

B) University Department Level :-

There shall be a CBCS working committee in each University Department comprising of the following members

1. Head of the University Department - Chairman
2. One Teacher nominated by Honourable Vice-Chancellor - Member

C) College Level :-

There shall be a CBCS working committee in each affiliated college comprising of the following members

1. Principal - Chairman
2. HODs of Teaching Departments of a College - Members
3. IQAC Co-ordinator - Member- secretary

Powers and Duties of the CBCS Working Committee

1. Committee shall take review of the Implementation of the CBCS after completion of every Semester
2. The committee shall report to the University about difficulties faced during the implementation of the CBCS to the University.
3. The committee should also consider the grievances of the students regarding the difficulties/ disadvantages put to them if any during their studies under CBCS.
4. For college level and university level, the committee will also be a grievance redressal committee for implementation of CBCS, respectively.
5. The committee may consider any other matter in the interest of the students as far as the CBCS is concerned.

Appendix - A

Table-A
Ancillary Credit courses

Sr. No	Course/Programs	Nature	Semester	Organised by	Teaching Learning Training Period (Hours)	Evaluation Authority	Performance Evaluation Mode	Min. Passing Grade/ Rank	Exam or Non-exam	Credit/s Earned
1	Induction Program	Mandatory	I	College/ Institute/ Department	30	College/ Institute/ Department	Evaluation participation		Non-exam	1
2	Internship / Apprenticeship /Field work/ Work Experience	Mandatory	II to V	Organisation/ Industry/ College/ Institute	120	Organisation/ Industry/ College/ Institute	Score-sheet of Performance		Non-exam	4
3	Environmental studies	Mandatory	III	College	30	College	Survey , Project report, Test etc.	-	Non-exam	2
4	Open Elective Course GIC/Skill/ MOOC	optional	I to VI	Online/ Offline Mode/ SWAYAM/SSC/NSDC/college/institut	75	SWAYAM/ NPTEL/ College/ Institute/ SSC/NSDC	Certification from concerned Authority	P	Exam or Non Exam	5
5	Co-curricular / Extra-curricular Activities	optional	I to VI	As per Table 2, 3 & 4	Adequate as per activity	Organised as per level of activity	As per Para 8(D) Table 2, 3 and 4	Not applicable	Non-exam	5

Note :- 1.Minimum 11 (Serial No. 2 and 3 mandatory) credits of the programme are mandatory to be earned by all the students from Ancillary Credit Courses as mentioned in Table A.

2. Record of student's Performance cum Evaluation (containing attendance, concept knowledge, intellectual/ decision making ability, handling skill, sense of responsibility, co-operative/leadership quality, presentation/demonstration) related to Internship /Apprenticeship/Field work/Work Experience shall be maintained by the College/Institute/University Department

3. For allotment of Internship /Apprenticeship/Field Work/Work Experience, the College/ Institute/University Department shall follow standard operating procedures (SOP) with concerned College/Institute/University Department/Organisation/ Industry on the basis of Memorandum Of Understanding (MOU) /Letter of Intent and Joining letter. Further, for validation, progress records, Evaluation Sheet etc. shall be maintained by the College/Institute/University Department.

a. College/ Institute/University Department shall submit credit report for Ancillary Credit Courses as per Table A to the University.

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Appendix B

COMPUTATION OF SGPA AND CGPA AND AWARD OF DEGREE

1) Marks of each paper/subject shall be converted into grades as given in the table No.5.

Grades and Grade Points

TABLE – 5

Grade	Description	Range of Marks obtained out of 100 or equivalent fraction	Grade point
O	Outstanding	90-100	10
A+	Excellent	80-89	9
A	Very Good	70-79	8
B+	Good	60-69	7
B	Above average	55-59	6
C	Average	50-54	5
P	Pass	40-49	4
F	Fail	Below 40	0
Ab	Absent	Ab	0

A student obtaining Grade F or Ab shall be considered failed and will be required to reappear in the examination.

2) Based on the grade points obtained in each course /Subject/Paper Semester Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) are computed as follows :

i) Computation of SGPA:

Semester Grade Point Average (SGPA) is the weight age average of point obtained by a student in a semester and computed as follows.

SGPA (Si) = $\sum Ci \; x \; Gi \; / \sum Ci$

Where Ci denotes the number of credits of the i^{th} course and G_i denotes the grade points scored by a student in the i^{th} Course.

ii) Computation of CGPA :

The CGPA is computed as follows

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

Where Si denotes the SGPA of the i^{th} Semester and C_i denotes 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.

3) Equivalence of the conventional division/class to the corresponding C.G.P.A. in final semester is in accordance with the following table

Equivalence of Class/Division to C.G.P.A.

Sr. No.	C.G.P.A.	Class/Division
1.	7.5 or more than 7.5	First Class with Distinction
2.	6.00 or more but less than or equal to 7.49	First Class
3.	5.50 or more but less than or equal to 5.99	Higher Second Class
4.	5.00 or more but less than or equal to 5.49	Second Class
5.	4.00 or more but less than or equal to 4.99	Pass

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GUIDELINES TO PAPER SETTERS **Appendix C**

1. Medium of Instructions and for examination shall be as prescribed by the BOS.
2. For the internal assessment & University end semester theory examinations, the paper should be set preferably from the question bank prepared by the University.

The question should be based on bloom's Taxonomy levels of (a) Remembering (b) Understanding (c) Application (d) Analysis.

Remember: -

Skill Demonstrated	**Question Ques / Verbs for tests**
• Ability to recall of information like, facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria ability to recall methodology and procedures, abstractions, principles and theories in the field • Knowledge of dates, events, places. • Mastery of subject matter	List, define, describe, state, recite, recall, identify, show, label, tabulate, quote, name, who, when where, etc.

Understand: -

Skill Demonstrated	**Question Ques / Verbs for test**
• Understanding information grasp • meaning • translate knowledge into new context • interpret facts, compare, contrast order, • group, infer causes predict consequences •	Describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss.

Apply: -

Skill Demonstrated	**Question Ques / Verbs for test**
•• Use information use methods, concepts, laws, theories in new • situations solve problems using required skills of knowledge • Demonstrating correct usage of method or procedure	Calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify.

Analysis: -

Skill Demonstrated	**Question Ques / Verbs for test**
• break down a complex problem into parts. Identify the relationships and interaction • between the different parts of complex problem.	Classify, outline, break down, categorize, analyse, diagram, illustrate, infer, select.

Evaluation (Judging)Analysis: -

Skill Demonstrated	Question Ques / Verbs for test
Evaluation questions encourage students to develop opinions and make value decisions about issues based on specific criteria	. Assess, Critique, Determine, Evaluate, Judge, Justify, Measure & Recommend **Examples of questions:** • "How could you select...?" • "How could you prove...?" • "How would you prioritize...?" • "What information would you use to support...?"

Synthesis (Creating)

Skill Demonstrated	Question Ques / Verbs for test
These questions encourage students create something new by using a combination of ideas from different sources to form a new whole	. Arrange, Combine, Create, Design, Develop Formulate, Integrate & Organize **Examples of questions:** • "What could be changed to improve...?" • "How would you test...?" • "What way would you design...?" • "What outcome would you predict for...?"

The Weightage of marks should be given preferably in the range of :

(a)	Remembering	10 to 20%
(b)	Understanding	30 to 45%
(c)	Application	30 to 45%
(d)	Analysis	10 to 20%
(e)	Evaluation (Judging)	10 to 15%
(f)	Synthesis (Creating)	10 to 15%
		100 to 160%

Types of Questions: -

a) Multiple Choice Question (M.C.Q.) as an when applicable: -

1. **Relevant content:** The question should be based on the relevant and important content.
2. **Application of knowledge, not only theory:** The question tests the application of knowledge, does not only test how the candidate recalls isolated theoretical facts.
3. **Focused questions and homogeneous answers:** The question focuses on one relevant aspect of the topic, all proposed answers belong to the same content dimension (i.e., diagnosis, or causes, or managements decisions etc.)
4. **Clear and unambiguous answer:** The best answer clearly stands out. Avoid "correct" answers with existing controversial doctrines.
5. **Appropriate level of difficulty (50% -90% correct answers):**

   Too difficult - even the best candidates need to guess
   Too easy - weak candidates get a "present"
6. **Unambiguous, concise and simple phrasing:** Avoid trick questions, double negatives.

   Use only common abbreviations, short sentences etc.
   Avoid imprecise qualifications (often, usually etc.
7. **Avoid clues:**

   Clues can help candidates guess the correct answer. Examples are:

   - One answer is much more detailed than the others
   - Only one answer follows grammatically from the stem •Non logical order of the answers

General strategies

- **Test comprehension and critical thinking, not just recall**
  Ask MCQ so as to interpret facts, evaluate situations, explain cause and effect, make inferences, and predict results.

- **Use simple sentence structure and precise wording**
  Write test questions in a simple structure that is easy to understand. And try to be as accurate as possible in your word choices. Words can have many meanings depending on colloquial usage and context.
- **Use familiar language.**
  The question should use the same terminology that was used in the course. Avoid using unfamiliar expressions or foreign language terms, unless measuring knowledge of such language is one of the goals of the question. Students are likely to dismiss distracters with unfamiliar terms as incorrect.
- **Place most of the words in the question stem**
  While using a question stem, rather than an entire question, ensure that most of the words are in the stem. This way, the answer options can be short, making them less confusing and more legible.
- **Avoid giving verbal association clues from the stem in the key.**
  If the key uses words that are very similar to words found in the stem, students are more likely to pick it as the correct answer.
- **Avoid trick questions**
  Questions should be designed so that students who know the material can find the correct answer. Questions designed to lead students to an incorrect answer, through misleading phrasing or by emphasizing an otherwise unimportant detail of the solution, violate this principle.
- **Avoid negative wording**
  Students often fail to observe negative wording and it can confuse them. As a result, students who are familiar with the material often make mistakes on negatively worded questions. In general, avoid having any negatives in the stem or the options. In the rare cases where you use negatives be sure to emphasize the key words by putting them in upper case, and bolding or underlining them.
- **Avoid double negatives**
  Don't use combinations of the words like not, no, nor, the un prefix, etc. in the same question.
- **Make the choices grammatically consistent with the stem.**
  Read the stem and each of the choices aloud to make sure that they are grammatically correct.
- **As far as possible, keep all answer choices of the same length.**
  This can be difficult to achieve, but expert test-takers can use answer length as a hint to the correct answer. Often the longest answer is the correct one. When one can't get all four answers to the same length, two short and two long can be used.
- **Place the choices in some meaningful order.**
  When possible, place the choices in numerical, chronological or conceptual order. A better structured question is easier to read and respond.
- **Randomly distribute the correct response.**
- The exam should have roughly the same number of correct answers that are a's, b's, c's and d's (assuming there are four choices per question)
- **Avoid using "all of the above"**
  If "all of the above " is an option and students know two of the options are correct, the answer must be "all of the above". If they know one is incorrect, the answer must not be "all of the above". A student may also read the first option, determine that it is correct, and be misled into choosing it without reading all of the options.
- **Avoid using "none of the above"**
  The option "none of the above" does not test whether the student knows the correct answer, but only that he/she knows the distracters aren't correct.
- **Refrain from using words such as always, never, all, or none.**
  Most students know that few things are universally true or false, so distracters with these words in them can often be easily dismissed.
- **Avoid overlapping choices**
  Make the alternatives mutually exclusive. It should never be the case that if one of the distracters is true, another distractor must be true as well.
- **Avoid questions of the form "Which of the following statements is correct?"**
  There is no clear question being asked, and the choices are often heterogeneous. Such questions are better presented in the form of True/ False questions.
- **Instruct students to select the "best answer" rather than the "correct answer"**
  By doing this, you acknowledge the fact that the distracters may have an element of truth to them and discourage arguments from students who may argue that their answer is correct as well.

Designing stems

- **Express the full problem in the stem.**

When creating the item, ask yourself if the students would be able to answer the question without looking at the options. This makes the purpose of the question clear.

- **Put all relevant material in the stem.**
  Do not repeat in each of the alternatives information that can be included in the stem. This makes options easier to read and understand, and makes it easier for students to answer the question quickly.

- **Eliminate excessive wording and irrelevant information from the stem.**
  Irrelevant information in the stem confuses students and leads them to waste time.

Designing alternatives

- **Limit the number of alternatives.**
  Use between three and five alternatives per question. Research shows that three choice items are about as effective as four or five-choice items, mainly because it is difficult to come up with plausible distracters.
- **Make sure there is only one best answer.**
  Avoid having two or more options that are correct, but where one is "more" correct than the others. The distracters should be incorrect answers to the question posed in the stem. **Make the distracters appealing and plausible.**

  All of the wrong answer choices should be completely reasonable. If the distracters are farfetched, students will too easily locate the correct answer, even if they have little knowledge. When testing for recognition of key terms and ideas keep the distractors similar in length and type of language as the correct solution. When testing conceptual understanding, distractors should represent common mistakes made by students.

b) Short Answer (SA) descriptive .....marks as applicable)

A short answer question as the term indicate is one to which a brief answer can be given. When the students are required to give a brief and precisely defined response, the suitable type is the restricted response questions. The specific form of the answer should also be indicated, e.g., List, Define, Give reason etc.

While framing a question requiring short answer it should be ensured that:

1. The statement constituting the question is simple, clear and unambiguous.
2. The scope of the answer is limited.
3. The direction given in the question is clear.
4. The question constitutes a valid testing situation for the ability under consideration
5. The question is likely to be interpreted in the same way by teachers/ students/ examiners.
6. The question does not require further restructuring.

c) Long Answers (LA) .....marks as applicable)

Long Answer (LA)

As the term indicates a long answer question is the one that needs a comprehensive explanation incorporating different ideas. The question should require the student to organise his ideas, choose the form of his answer and answer in his own words.

While framing a question requiring a long answer it should be ensured that:

1. The situation presented in the question is not new to most of the students.
2. The student will not be able to produce in the full, memorised answer.
3. The question involves the use of judgment on the part of student.
4. The answer can be completed within the limited time given.
5. The length and the scope of the answer is specified.

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Appendix D

Instruction to the BOS

Curriculum / syllabus shall be modified/prepare for the courses/subjects prescribed as in CBCS direction.

The Programme Educational Objectives (PEOs), Program Outcomes (POs), Programme Specific Outcomes (PSOs) should be well defined.

For each course of the Program, learning objectives and learning outcomes: Course Outcomes (COs) should be defined carefully in accordance with Bloom's Taxonomy.

A comprehensive note on employability potential of the program should be added separately at the Preface/Preamble of the Program Curriculum

Bloom's hierarchy takes students through a process of synthesizing information that allows them to think critically. Students start with a piece of information and are motivated to ask questions and seek out answers.

Not only does Bloom's Taxonomy help teachers understand the process of learning, but it also provides more concrete guidance on how to create effective learning objectives.

Table 6 Bloom's Taxonomy

Bloom's Level	Key Verbs (keywords)	Example Learning Objective
Create	design, formulate, build, invent, create, compose, generate, derive, modify, develop.	*By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.*
Evaluate	choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate.	By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.
Analyze	classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, associate.	*By the end of this lesson, the student will be able to* differentiate between potential and kinetic energy.
Apply	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present.	*By the end of this lesson, the student will be able to* calculate the kinetic energy of a projectile.
Understand	describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss.	*By the end of this lesson, the student will be able to* describe Newton's three laws of motion to in her/his own words
Remember	list, recite, outline, define, name, match, quote, recall, identify, label, recognize.	*By the end of this lesson, the student will be able to* recite Newton's three laws of motion.

This also reminds teachers that learning is an active process, stressing the importance of including measurable verbs in the objectives. And the clear structure of the taxonomy itself emphasizes the importance of keeping learning objectives clear and concise as opposed to vague and abstract.

OBE (Outcome Based Education) starts with a clear statement on what Knowledge, Skills and Attitudes, the Student will be able to demonstrate as having acquired on successful completion of a program of study. These should be clearly measurable.

Program Educational Objectives (PEOs):

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

GRADUATE ATTRIBUTES

Knowledge :Graduates have comprehensive knowledge and understanding of their subject area, the ability to engage with different traditions of thought, and the ability to apply their knowledge in practice including in multi-disciplinary or multi-professional contexts.

Critical and Analytical Thinking :Graduates are effective problems-solvers, able to apply critical, creative and evidence-based thinking to conceive innovative responses to future challenges.

Communication : Graduates convey ideas and information effectively to a range of audiences for a variety of purposes and contribute in a positive and collaborative manner to achieving common goals.

Team Work, Leadership : Graduates engage in professional behaviour and have the potential to be entrepreneurial and take leadership roles in their chosen occupations or careers and communities.

Ethics : Graduates are responsible and effective global citizens whose personal values and practices are consistent with their roles as responsible members of society.

Digital Competencies :Graduates are well prepared for living, learning and working in a digital society.

Life Long Learning: Graduates are self-aware and reflective; they are flexible and resilient and have the capacity to accept and give constructive feedback; they act with integrity and take responsibility for their actions.

Program Outcomes (POs):
Program outcomes: Describe what students are expected to know and would be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire as they progress through the program.
Program outcomes basically describe knowledge, skills and behavior of students as they progress through the program as well as by the time of graduation and must reflect all GAs (Graduate Attributes).

Program Specific Outcomes (PSOs):
Program Specific Outcomes are statements that describe what the graduates of a specific program should be able to do.

Course Outcomes (COs):
Statements indicating what a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course there may be 5 or 6 COs. The keywords used to define COs are based on Bloom's Taxonomy.

Typically 4-6 CO s should be identified /Course. COs are major domain specific outcomes written using action verbs which are specific, measurable and can be demonstrated by students on completion of the course. Course Outcomes should aim to develop higher order skills in each Domain of Learning. Evaluation, Synthesis, Analysis are typical examples in Cognitive Domain. Outcomes which can be mastered in a significantly lower no. of lessons are likely to be too trivial and more suitable for Unit or Module Outcomes. Attainment of each CO should lead to attainment of one or more PO s.

For the internal assessment & University end semester theory examinations, the paper should be set preferably from question bank. Hence question bank should be prepared. Also Board of Studies shall prepare a question bank of MCQs from units of all subjects.

Curriculum/syllabus of concern Generic Open Elective Courses (GOECs), General Interest Courses (GICs), skill courses and Modules shall be prepared by the respective BOS as prescribed in CBCS scheme.
Each BOS shall design SEM for each offered course/subject/paper except for GOEC and Environmental Science.

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APPENDIX - E

Glossary of Terms

A. Academic Year : Academic year means academic activities of the University in a year (odd semester followed by even semester) as notified in the Academic Calendar.

B. **Semester :** It is a period of study comprising of 15 to 18 weeks of academic work equivalent to normally 90 teaching days. The odd semester may be scheduled from July to December and even semester from January to June.

C. **Programme / Programme of study** : Programme / Programme of study means a higher education programme pursued for a degree specified by the UGC under Section 22 (3) of the UGC Act;

D. Course/Subject/Paper :-Course means one of the specified units which go to comprise a programme of study. It is referred to, as a 'paper' or 'subject' which is a component of a programme. All courses need not carry the same weight. A course may include but may not be limited to lectures / tutorials / laboratory work / field work /internship/ outreach activities / project work / vocational training / viva / seminars / term papers / assignments / presentations / dissertation/self-study etc. or a combination of these. Courses in a programme may include Core, Elective and Foundation.

i) Ability Enhancement Courses (AEC):-The Ability Enhancement Courses may be of two kinds: Ability Enhancement Compulsory Courses (AECC) and Skill Enhancement Courses (SEC). "AECC" courses are the courses based upon the content that leads to Knowledge enhancement. "SEC" courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc.

a. Communication Skills : Abilities used when giving and receiving different kinds of information. It involves verbal, non verbal, written, visual, listening, empathising etc. and other means of expression.
b. Environmental Studies : Deals with every issue that affects an organism. It is essentially a multidisciplinary approach that brings about an appreciation of our natural world and human impacts on its integrity. It is an applied science as it seeks practical answers to making human civilization sustainable on the earth's finite resources. Its components include Biology, Geology, Chemistry, Physics, Engineering, Sociology, Health, Anthropology, Economics, Statistics, Computers and Philosophy.

ii) Discipline Specific Core (DSC) Course: There may be a Core Course in every semester. This is the course which is to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said discipline of study.

iii) **Elective Course:** A course which can be chosen from pool of courses / papers and which may be very specific or specialized or advanced or supportive to the discipline / subject of study or which provides an extended scope or which enables an exposure to some other discipline / subject / domain or nurtures the students proficiency / skill is called an elective course.

An elective may be "Generic Elective" focusing on those courses which add generic proficiency to the students. An elective may be "Discipline centric" or may be chosen from an unrelated discipline. It may be called an "Open Elective."

iv) **Discipline Specific Elective (DSE) Course:** Elective courses offered under the main discipline/subject of study is referred to as Discipline Specific Elective. The College/ University Department/Institute may also offer discipline related Elective courses of Inter-disciplinary nature (to be offered by main discipline/subject of study). It is the specialized / emerging study area allied to the core subject.

v) **Generic Elective Course (GEC) :** An elective course chosen from an unrelated discipline/subject, with an intention to seek exposure beyond discipline/s of choice is called a Generic Elective. The purpose of this category of courses is to offer the students the option to explore disciplines of interest beyond the choices they make in Core and Discipline Specific Elective papers.

P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

vi) **Open Elective Course (OEC)** : The group of different choice based courses comprising of general interest courses related to discipline specific core (DSC) subjects or of interdisciplinary nature, MOOCs offered by different authorized agencies, open skill courses.

vii) **Generic Open Elective course (GOEC) :**The group of different important choice based courses (may be of interdisciplinary nature) related to the fundamental growth of students as a responsible citizen of India.

viii) **General Interest Course (GIC) :** General interest course is a course taken out of interest rather than for academic reasons. It may be chosen from different subjects / courses from the discipline or inter-discipline and the curriculum of these courses shall be designed by respective College/Institute/University Department and approved by the respective BOS. The nature of these courses shall be of self-study nature under the guidance of teacher / mentor / faculty member concerned. The evaluation of these courses shall be done by teacher / mentor / faculty member concerned (may be in the form of assignment / written test / project etc.) and marks and grades shall be communicated to the University.

ix) **MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and following the four quadrant approach consisting of video, text, self assessment and learn more.

x) **Skill Enhancement Course (SEC) :**This course may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge and should contain both theory and lab/hands-on training/field work to increase employability of the students.

xi) **Project:** A course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a student studies such a course on his own with an advisory support by a teacher/faculty member is called dissertation/project.

xii) **Research Project/Dissertation:** A course designed to acquire special / advanced knowledge/Research with an advisory support / guidance by a teacher / faculty member.

xiii) **Foundation Course:** The Foundation Courses may be of two kinds: Compulsory Foundation and Elective foundation. "Compulsory Foundation" courses are the courses based upon the content that leads to Knowledge enhancement. Elective Foundation courses are value-based and are aimed at man-making education.

xiv) **Skill Enhancement Module (SEM) :** The module is based on the application of the subjects discipline specific core (DSC), discipline specific elective (DSE), communication skills in English subjects to provide skills to the students for developing their employment / self-employment / entrepreneurship capabilities.

E. **Examinational Credits:** Examinational Credits allows a student to receive credit for learning by demonstrating mastery of course outcomes skills and knowledge by taking the course exam(s). Some exams may require performance of a skill set, while other exams may be written tests covering course content.

F. **Ancillary Credits :** credits earned by the students by participating in Sports / Extra-curricular Activities / Unnat Bharat Abhiyan / Internship / Field work / Work experience / Avishkar / Induction programme / NSS / NCC/ Cultural Activities / Inter University Academic Activities and other activities prescribed by the university from time to time but other than core or elective courses.

G. **Internship / Field Work / Work Experience :** The prescribed hours of practical / on field training related to any Discipline Specific Core (DSC)course with any Institute / Firm / Industry / Establishment as identified by College/Institute/University Department.

H. **Induction Programme:** A programme of prescribed duration specially designed for the first year / first semester students to make the students feel comfortable in their new environment, set a healthy daily routine, create bonding in the batch as well as between faculty members, develop awareness, sensitivity, self-exploration and understanding of society at large, and nature also to inculcate in them ethos and culture of the College/Institute/University Department.

I. **Activity:**

i. **Curricular Activity :-**Activities relating to the subjects comprising a course of study in the College/Institution/University Departments

ii. **Co-curricular Activity :-** Co-curricular refers to activities, programs and learning experience that complement in some way, what students are learning in college/institution/university departments. These activities are connected to the academic curriculum like Extension Activities, Debates, Quiz competition, seminars etc.

iii. **Extra-curricular Activity :-**Extra-curricular takes place in addition/outside to regular curriculum including but not limited to Sports, Start-up, Hackathon, Avishkar, Students Exchange Program, Social Activities, Volunteering, NSS, NCC, Annual Gatherings, TRDEA (Teaching, Research, Development and Extension Activities etc.)

J. **Faculty member:** Faculty member means an individual qualified as per statutory Regulations, working on Full Time basis in an Institution/ University Department/College.

K. **Teacher :** Teacher means full time approved Professor, Associate Professor, Assistant Professor, Reader, Lecturer, Librarian, Principal, Director of institution, Director of Knowledge Resource Centre, Director of Centre of Lifelong Learning and Extension, Deputy and Assistant Librarian, in the University, College Librarian, Director or Instructor of physical Education in any University Department, conducted, affiliated, or autonomous college, autonomous institutions or department or recognized Institutions of the University**.**

L. **Student:** Student means an individual who is admitted and registered for an academic programme of the University or Affiliated, Conducted, Autonomous Colleges, Recognized Institutions and Departments of the University.

M. **Inter-disciplinary studies:** Inter-disciplinary studies mean the combined academic studies and research in different disciplines as prescribed.

N. **Multi-disciplinary studies:** Multi-disciplinary studies mean the combined academic studies and research in different streams of a particular discipline as prescribed.

O. **Level:** Level means Diploma, Post Diploma Certificate, Under Graduate Degree, Post Graduate Diploma and Post Graduate Degree Programmes.

P. **Laboratory Work (Lab):** The skill course based on the practical related to any or more Discipline Specific Core (DSC) course / Discipline Specific Elective (DSE) course as prescribed in Teaching-Learning schemes.

Q. **MCQs:** Multiple Choice Questions based on any / all units of a particular course of the programme.

R. **Online Learning (OL)**: Online Learning mode means a mode of providing flexible learning opportunities by overcoming separation of teacher and learner using a variety of media, including print, electronic, MOOCs in a totally online mode.

S. **MOOCs:** Massive Open Online Courses (MOOCs) are such online courses which are developed as per the pedagogy and following the four quadrant approach consisting of video, text, self assessment and learn more.

T. **SWAYAM:** SWAYAM is the indigenous platform of the MHRD, GOI providing an integrated portal and platform for hosting Massive Open Online Courses (MOOCS) developed under the aegis of NME-ICT. Government of India adopted the MOOCs concept to supplement the formal education system in the country from high school to higher education, named aptly as the "Study Webs of Active-Learning for Young Aspiring Minds" (SWAYAM). It hosts various courses based on curriculum, continuing education and skill.

U. **Credit :** Credit means the standard methodology of calculating one hour of theory, one hour of tutorial, two hours of laboratory work / practical work / field work per week for a duration of a semester resulting in the award of one credit which is awarded by College/Institute/University Department. Credit for internship shall be one credit per week of internship, subject to a maximum of six credits.

V. **Letter Grade:** It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P, F and Ab.

W. **Grade Point:** It is a numerical weight allotted to each letter grade on a 10-point scale.

X. **Credit Point:** it is the product of grade point and number of credits for a course.

Y. **Credit Grade Report:** It is a report showing cumulative performance of a student in a given semester of the academic program. It shall display maximum, minimum and total marks of a course as per the scheme of teaching, learning and examination, evaluation as well as it will show the obtained : marks, credits, grade points, letter grade, SGPA, CGPA, percentage of total marks, class/division, incentive marks, remarks, result, exemptions and also other requisite information as prescribed.

Z. **Semester Grade Point Average (SGPA):** It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

AA. **Cumulative Grade Point Average (CGPA):** It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

BB. Transcript :-Transcript will display the program details like, all Semesters SGPA with details, Non-Examinational Credits with details as well as CGPA and Class/Division.

Programme Specific Provisions

26. The following shall be the examination leading to the Degree of Bachelor of Science (विज्ञान स्नातक)in the faculty of Science & Technology

(1) The B.Sc. Part-I, Semester-I (विज्ञान स्नातक भाग-१, सत्र-१) Examination;
(2) The B.Sc. Part-I, Semester-II (विज्ञान स्नातक भाग-१, सत्र-२) Examination;
(3) The B.Sc. Part-II, Semester-III (विज्ञान स्नातक भाग-२, सत्र-३) Examination;
(4) The B.Sc. Part-II, Semester-IV (विज्ञान स्नातक भाग-२, सत्र-४) Examination;
(5) The B.Sc. Final, Semester-V (विज्ञान स्नातक अन्त्य, सत्र-५) Examination; and
(6) The B.Sc. Final, Semester-VI (विज्ञान स्नातक अन्त्य, सत्र-६) Examination.

27. Subject to his/her compliance with the provisions of this Direction and of other Ordinances enforced from time to time, an applicant–

For admission to B.Sc. Part-I (Semester- I & II) programme candidate who has **-**

(I) Passed H.S.S.C. Examination with Physics, Chemistry and Mathematics may opt following Discipline Specific Core Subjects at B.Sc. Semester I & II Examinations.

(i) Semester- I & II –English and anyone of the second languages, namely Marathi, Hindi, Urdu, Sanskrit, and Supplementary English.
(ii) Sem. I to VI- Three Discipline Specific Core (DSC)out of which at least one subject from the following Groups A and B be selected.

Group A :- Chemistry, Industrial Chemistry, Petrochemical Science, Electronics, Mathematics.
Group B :- Physics, Geology, Statistics, Computer Science/Computer Application/ Information Technology and Geography.

(II) **passed H.S.S.C. Examination with Chemistry and** Biology may opt following subjects**:-**

(i) Semester- I & II –English and any one of the second languages**,** namely Marathi, Hindi, Urdu, Sanskrit, and Supplementary English..
(ii) Semester I to VI – Chemistry **(DSC)**
(ii) Semester I to VI –Any two **DSC** subjects from the following **Group C** be selected.

Group C : Botany, Zoology, Bio-Chemistry, Geography, Fisheries, Environmental Science, Micro-biology,
Geology, Food Science, Industrial Microbiology, Bio-technology and Apiculture.

(III) For Vocational subjects sanctioned by U.G.C. there shall be following scheme of Combination of D.S.C. subjects :

Students with Mathematics at H. S. S .C. Examination may opt any two DSC subjects from Group D and one from Group F.
Students passing with Biology, at H.S.S.C Examination may opt any two DSC subjects from Group E and One from Group F.

Group D : Physics, Chemistry, Mathematics, Electronics, Statistics, Computer Science/Computer Application/Information Technology and Geology.

Group E : Chemistry, Botany, Zoology, Micro-Biology, Geology, Geography, Environmental Science, Industrial Micro-biology and Bio-chemistry.

Group F : Biological Techniques and Specimen Preparation. Industrial Chemistry, Instrumentation, Computer Application, Seed Technology, Industrial Fish and Fisheries, Computer Maintenance, Bio-technology and other Vocational subjects proposed by U.G.C. from time to time shall be included in Group F.

The students passing H.S.S.C. examination with Physics, Chemistry, Biology and Mathematics shall have the option of opting Bioinformatics subject with any one DSC subject from Group-G and any one DSC subject from Group-H.

Group G: Botany, Zoology, Bio-Chemistry, Micro-biology, Industrial Micro-biology, and Bio-technology.

Group H: Chemistry, Physics, Electronics, Statistics, Geology, Mathematics and Computer Science.

(IV) Semester I to VI - The students, who have passed Higher Secondary Vocational Certificate (H.S.V.C. stream) examination (M.C.V.C. stream) with technical trades mentioned in column No. 2 of the following TABLE-7 shall be eligible for admission to the B.Sc. Part-I programme and Diploma in Engineering (Polytechnic) shall be eligible for admission to the B.Sc. Part- I Course of the group mentioned at serial No. 4 in the Discipline Specific Course (DSC) subjects mentioned in column No. 3 of the said TABLE-7 as per the scheme given in Group A to H.

TABLE – 7

Sr. No.	M.C.V.C. group and trade	D.S.C. Subjects allowed for admission to B.Sc.Part-I (Any three from the following)
1	**2**	**3**
1	**Para Medical Group** Medical Laboratory Technician Trade	Botany, Zoology, Computer Application (Vocational), Micro-biology, Bio-chemistry, Bio-technology (Regular/ Vocational), Geology, Geography, Environmental Science, Seed Technology (Vocational), Industrial Fish & Fisheries (Vocational), B.T.S.P. (Vocational), Chemistry, Bio-informatics, Industrial Micro-biology.
2	**Agricultural Group** Horticulture Trade or Crop Science Trade	Zoology, Chemistry, Computer Application (Vocational), B.T.S.P. (Vocational), Seed Technology(Vocational), Micro-biology, Bio-chemistry, Bio-technology (Regular/ Vocational), Geology, Geography, Environmental Science, Botany, Bio-informatics.
3	**Fisheries Group** Inland Fisheries Trade Fish Processing Technology Trade	Botany, Chemistry, Computer Application (Vocational), B.T.S.P.(Vocational), Industrial Fish & Fisheries (Vocational), Microbiology, Bio-chemistry, Bio-technology (Regular/Vocational), Geology, Geography, Environmental Science, Zoology, Bioinformatics, Apiculture.
4	**Engineering and Technology Group** Electronics Technology Trade Computer Technology Trade Electrical Technology/ Automobile Technology/ Construction Technology/ Mechanical Technology Trade	Physics, Computer Science, Geology, Geography, Statistics, Chemistry, Mathematics, Industrial Chemistry(Regular/Vocational), Electronics, Information Technology.

TABLE 8

Eligibility for Admission, Examination and Promotion to Higher Classes

Sr. No.	Name of the Exam. and admission to	The student should have passed the examination of	The student should have completed the following session / term satisfactorily with minimum prescribed residence time	The student shall have earned/**accumulate** minimum Credits
1.	2.	3.	4.	5.
1	B.Sc. Semester-I	As mentioned in Para 27	Semester-I	--
2	B.Sc. Semester-II	--	Semester-II	--
3	B.Sc. Semester-III	--	Semester-III	
4	B.Sc. Semester-IV	--	Semester-IV	- -
5	B.Sc. Semester-V	---	Semester-V	44 Semester I and II together for all courses
6	B.Sc. Semester-VI	--	Semester-VI	--

Appendix- F

The Executive Council, dated 1/2 -4 -1977, 11-7-1977 has prescribed the Teaching periods in the various subject in the Faculty of Science as follows.

Examination :		**B.Sc. Part – I**	
	Subject	**Theory**	**Practical**
1.	Chemistry	6	6
2.	Physics	6+1 Tutorial (per Batch)	6
3.	Botany	6	6
4.	Zoology	6	6
5.	Geology	6	6
6.	Mathematics	9+1 Tutorial-	-
7.	Statistics	6	6
8.	English		
	Languages :	4+1 Tutorial-	-
9.	Supplementary English	3	
10.	Marathi	3	
11.	Hindi	3	
12.	Sanskrit	3	
13.	Biochemistry	6	6
14.	Microbiology	6	6
15.	Electronics	6	6
16.	Computer Science	6	6
		B.Sc. Part –II and B.Sc. Final	
1.	Physics	6+1 Tutorial	6
2.	Mathematics	9+1 Tutorial-	-
3.	Chemistry	6	6
4.	Botany	6	6
5.	Zoology	6	6
6.	Geology	6	6
7.	Statistics	6	6
8.	Biochemistry	6	6
9.	Microbiology	6	6
10.	Electronics	6	6
11.	Computer Science	6	6

Note :- 1) * The strength of a batch of practical and Tutorials for Under- Graduate classes shall be 16 with an addition of 10% with the permission of Vice-Chancellor.
*(As amended by the Executive Council dated 27/28-4-1979).
2) A Period will be counted of 45 minutes duration at Under Graduate level.
3) For Tutorial class a batch will be of 16 students with an addition of 10% with the permission of the Vice-Chancellor per week.

28. An examinee for the B.Sc. Semester - I to VI examination shall be examined in the following subjects namely:-

A) Discipline Specific Core (DSC)

There shall be Discipline Specific core (DSC) course for Semester I to VI. Student shall be allowed to select only three core subjects as provided in the Clause 27.

B) **Discipline Specific Elective (DSE)**

There shall be Discipline Specific Elective (DSE) course in Semester VI for each subject as prescribed by the University. Student can select any one paper out of elective papers prescribed for particular core subject by the University. This will be a specialization offered to the students in the respective core subject. The nature/pattern of these papers shall be the same as other papers of DSC

29. The scope of the subjects shall be as indicated in the Syllabus.

30 (a)The student who has minimum 132 credits out of which 11 credits are as prescribed for the award of the Degree out of which 11 credits from Ancillary Credits Course as given in Table 8 of the programme at Bachelor of Science (B.Sc.) Part-I (Semester-I & II) Examination, Bachelor of Science (B.Sc.) Part-II(Semester-III & IV) and Bachelor of Science (B.Sc.)Part III (Semester- V & VI) out of minimum credits prescribed for B. Sc. Degree Examination, shall be entitled to receive a Credit Grade report signed by the Director, Examination and Evaluation.

(b) After passing the Bachelor of Science (B.Sc.) Part III (Semester-VI) Final Examination and satisfying other conditions as per Ordinance No.19 and on payment of prescribed fee, the examinee will receive a Degree in the prescribed form signed by the Vice-Chancellor.

Table 8

	Credits Offered	Credits to be earned
DSC	Up to 75	121
DSE	Up to 09	
AEC	Up to 05	
Language	Up to 38.5	
Ancillary including Internship – 04 OE/MOOc -05 And C.C. -05 GOEC – 04 AEC – 02	20	04 01 04 02
Total 14	128+0.50+20	132(121+11)

Further, on request & payment of prescribed fees, the examinee shall receive a transcript signed by the Director, Examination & Evaluation. The Degree will be awarded on the basis of CGPA.

31. There shall be no classification of examinees successful at the Bachelor of Science (B.Sc.) Semester-I to V Examination.

32. Successful examinees at the Bachelor of Science (B.Sc.) Final, Semester-VI Examination shall be placed in Class / Division as follows :

Equivalence of Class/Division to Corresponding C.G.P.A.

Sr. No.	C.G.P.A.	Class/Division
1	7.5 or more than 7.5	First Class with Distinction
2	6.00 or more but less than or equal to 7.49	First Class
3	5.50 or more but less than or equal to 5.99	Higher Second Class
4	5.00 or more but less than or equal to 5.49	Second Class
5	4.00 or more but less than or equal to 4.99	Pass

Note :- CGPA of B.Sc. students shall be computed excluding credits and grades of Language courses.

33. The existing Ordinance 143, Directions No.16/2010 and the Directions pertaining to corrigendum specified above of the programme shall be applicable to the students who have already sought their admissions as per its provisions and shall be repealed after exhausting the chances given to the failure students of old programme by the University. Similarly, the Direction No. 21/2023 dated 20/04/2023 has been repealed and replaced by this Direction, since as per proviso 12(8) of Maharashtra Public Universities Act, 2016, the Direction shall have to be converted into Statute, Ordinance or Regulations as the case may be, within 06 months of the issuing such Direction, failing which such Direction shall automatically lapsed.

Sd/-
(Dr.Pramod G. Yeole)
In-charge Vice-Chancellor,
Sant Gadge Baba Amravati University,
Amravati

Date : 12/12/2023

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Examinations leading to the Degree of Bachelor of Science ANNEXURE-A-1

Three Years(Six Semesters) Degree Programme under Choice Based Credit System(CBCS)

Scheme of Teaching, Learning, Examination and Evaluation(B.Sc. Semester I-Mathematics)(Semester-I)

Sr.No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Compulsory English		4	-		4	3	-	3	3	40	10	-	-	50	20	P
2	Communication Skill in English(AEC)		-	1	-	1	0.75	-	0.75	1			25	-	25	10	P
3	Second Language		2	-	-	2	1.5	-	1.5	3	40	10	-	-	50	20	P
4	Communication Skill in Second Language(AEC)		1	-	-	1	0.75	-	0.75	1			25	-	25	10	P
5	Mathematics,(DSC-1) Paper-I		4	1	-	5	3.75	-	3.75	3	60	15	-	-	75	30	P
6.	Mathematics(DSC-2) Paper-II		5	-	-	5	3.75	-	3.75	3	60	15	-	-	75	30	P
7.	Science Subject 1 excluding Mathematics(DSC-3)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
8.	Practical for Science Subject1 (DSC-3) excluding Mathematics(DSC-4)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
9	Science Subject 2 excluding Mathematics(DSC-5)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
10	Practical for Science Subject 1 (DSC-5) excluding Mathematics(DSC-6)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
11	Generic Elective I (GOEC)		2	-	-	2	2	-	2	2	College Level examination				50	20	p
12	**Induction Programme***		30 hrs(at thebeginningof1st Semester) **1**													10	P
	Total					44			**30**						650		

L:Lecture,T:Tutorial,P:Practical

Note :1.Internship /Field Work / Work Experience will be conducted after I semester till V semester in vacations for minimum 120 hours. It's credits and grades will be reflected in final semester VI credit grade report.- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

2. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977,11-7-1977Appendix-F

3. If DSC (excluding Mathematics)is Physics, then 1 Tutorial be added.

Examinations leading to the Degree of Bachelor of Science

Three Years(Six Semesters) Degree Programme under Choice Based Credit System(CBCS)

Scheme of Teaching, Learning, Examination and Evaluation(B.Sc.SemesterII-Mathematics)(Semester-II)

Sr.No	Subject	Subject Code	Teaching & Learning Scheme							Duration o Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Compulsory English		4	-		4	3	-	3	3	40	10	-	-	50	20	P
2	Communication Skill in English(AEC)		-	1	-	1	0.75	-	0.75	1			25	-	25	10	P
3	Second Language		2	-	-	2	1.5	-	1.5	3	40	10	-	-	50	20	P
4	Communication Skill in Second Language(AEC)		1	-	-	1	0.75	-	0.75	1			25	-	25	10	P
5	Mathematics,(DSC-7) Paper-III		4	1	-	5	3.75	-	3.75	3	60	15	-	-	75	30	P
6.	Mathematics(DSC-8) Paper-IV		5	-	-	5	3.75	-	3.75	3	60	15	-	-	75	30	P
7.	Science Subject 1 excluding Mathematics(DSC-9)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
8.	Practical for Science Subject1 (DSC-9) excluding Mathematics(DSC-10)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
9	Science Subject 2 excluding Mathematics(DSC-11)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
10	Practical for Science Subject 1 (DSC-11) excluding Mathematics(DSC-12)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
11	Generic Elective II (GOEC)		2	-	-	2	2	-	2	2	College Level examination				50	20	p
	Total					44			29						650		

L:Lecture,T:Tutorial,P:Practical

Note:1.Internship/Field Work/Work Experience will be conducted after I semester till V semester in vacations for minimum 120 hours .It's credits and grades will be reflected in final semester VI credit grade report.-OEC(Optional)can be studied during semester I to VI ,Its credits and grades will be reflected in final semester VI credit grade report

2. **Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977,11-7-1977, Appendix-F**
3. **If DSC (excluding Mathematics) is Physics, then 1 Tutorial be added.**

Examinations leading to the Degree of Bachelor of Science **ANNEXURE – A3**

Three Years (Six Semesters) Degree Programme under Choice Based Credit System (CBCS)

Scheme of Teaching, Learning, Examination and Evaluation (B.Sc. Semester I -Excluding Mathematics) (Semester-I)

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Compulsory English		4	-		4	3	-	3	3	40	10	-	-	50	20	P
2	Communication Skill in English (AEC)		-	1	-	1	0.75	-	0.75	1			25	-	25	10	P
3	Second Language		2	-	-	2	1.5	-	1.5	3	40	10	-	-	50	20	P
4	Communication Skill in Second Language (AEC)		1	-	-	1	0.75	-	0.75	1			25	-	25	10	P
5	(DSC-1)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
6.	Practical for (DSC-1), DSC-2		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
7.	(DSC-3)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
8	Practical for (DSC-3), (DSC-4)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
9	(DSC-5)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
10	Practical for (DSC-5)- (DSC-6)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
11	Generic Elective I (GOEC)		2	-	-	2	2	-	2	2	College Level examination				50	20	p
12	**Induction Programme***					30 hours(at the beginning of 1st Semester)			1							10	P
	Total					46			29.25 (rounded off to 29)						650		

L: Lecture, T: Tutorial, P: Practical

Note : 1. Internship /Field Work / Work Experience will be conducted after I semester till V Semester in vacations for minimum 120 hours. It's credits and grades will be reflected in final Semester VI credit grade report. - OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

2. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977, 11-7-1977 Appendix- F

3. If DSC (excluding Mathematics) is Physics, then 1 Tutorial be added.

Examinations leading to the Degree of Bachelor of Science **ANNEXURE – A4**

Three Years (Six Semesters) Degree Programme under Choice Based Credit System (CBCS)

Scheme of Teaching, Learning, Examination and Evaluation (B.Sc. Semester II -Excluding Mathematics) (Semester-II)

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Compulsory English		4	-		4	3	-	3	3	40	10	-	-	50	20	P
2	Communication Skill in English (AEC)		-	1	-	1	0.75	-	0.75	1			25	-	25	10	P
3	Second Language		2	-	-	2	1.5	-	1.5	3	40	10	-	-	50	20	P
4	Communication Skill in Second Language (AEC)		1	-	-	1	0.75	-	0.75	1			25	-	25	10	P
5	(DSC-7)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
6.	Practical for (DSC-7), DSC-8		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
7.	(DSC-9)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
8 .	Practical for (DSC-9), (DSC-10)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
9	(DSC-11)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
10	Practical for (DSC-11)-(DSC-12)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
11	Generic Elective II (GOEC)		2	-	-	2	2	-	2	2	College Level examination				50	20	p
	Total					46			28.25 (rounded off to 28)						650		

L: Lecture, T: Tutorial, P: Practical

Note : 1. 1. Internship /Field Work / Work Experience will be conducted after I Semester till V semester in vacations for minimum 120 hours. It's credits and grades will be reflected in final Semester VI credit grade report. - OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final Semester VI credit grade report

2. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977, 11-7-1977 Appendix- F

3. If DSC (excluding Mathematics) is Physics, then 1 Tutorial be added.

Sant Gadge Baba Amravati University, Amravati

Examinations leading to the Degree of Bachelor of Science **APPENDIX – A3.1**

Three Years (Six Semesters) Degree Programme under Choice Based Credit System (CBCS)

Scheme of Teaching, Learning, Examination and Evaluation (B.Sc. -Mathematics) (Semester-III)

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Mathematics, (DSC-13)		5	-	-	5 L	3.75	--	3.75	3	60	15	-	-	75	30	P
2	Mathematics (DSC-14)		4	1*	---	4 L + 1 Tutorial*	3.75	--	3.75	3	60	15	-	-	75	30	P
3	Science Subject1 excluding Mathematics (DSC-15)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
4	Practical for Science Subject 1 (DSC-15) excluding Mathematics (DSC-16)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
5	Science Subject 2 excluding Mathematics (DSC-17)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
6	Practical for Science Subject 1 (DSC-17) excluding Mathematics (DSC-18)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
7	Environmental Studies-I (AEC)		2	-	-	2	1.5	--	1.5	2	Internal Assessment by college/institute/department				50	25	P
8	Open Elective Course Optional		GIC/MOOC/Skill Course														
	Total								22.5						500		

L: Lecture, T: Tutorial, P: Practical

Note :1. Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 120 hrs, cumulatively entailing 4 Credits. It's credits and grades will be reflected in final semester VI credit grade report.

2. OEC (Optional) can be studied (through SWAYAM/MOOC, etc.) during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

3. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977, 11-7-1977 Appendix- P

4. If DSC (excluding Mathematics) isPhysics, then 1 Tutorial be added.

5. In Tutorial for Mathematics, * indicates that for the subject Mathematics, the strength of a batch of Tutorials for UG classes shall be 16 (Sixteen) with an addition of 10 percent with the permission of the Honourable Vice Chancellor (As amended by the Executive Council dated 27/28-4-1979).

Examinations leading to the Degree of Bachelor of Science **APPENDIX – A4.1**

Three Years (Six Semesters) Degree Programme under Choice Based Credit System (CBCS)

Scheme of Teaching, Learning, Examination and Evaluation (B.Sc. -Mathematics) (Semester-IV)

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	Mathematics, (DSC-19)		5	--	--	5 L	3.75	-- -	3.75	3	60	15	-	-	75	30	P
2	Mathematics (DSC-20)		4	1*	--	4 L + 1 Tutorial*	3.75	--	3.75	3	60	15	-	-	75	30	P
3	Science Subject 1 excluding Mathematics (DSC-21)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
4	Practical for Science Subject 1 (DSC-21) excluding Mathematics (DSC-22)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
5	Science Subject 2 excluding Mathematics (DSC-23)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
6	Practical for Science Subject 1 (DSC-23) excluding Mathematics (DSC-24)		-	-	6	6		2.25	2.25	3	-	-	25	25	50	25	P
7	Environmental Studies-II (AEC)		2	-	-	2	1.5	-	1.5	3	70	30	-	-	100	40	P
8	Open Elective Course Optional		GIC/MOOC/Skill Course														
	Total								22.5						550		

L: Lecture, T: Tutorial, P: Practical

Note : 1. Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 120 hrs, cumulatively entailing 4 Credits. It's credits and grades will be reflected in final semester IV credit grade report.

2. OEC (Optional) can be studied (through SWAYAM/MOOC, etc.) during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

3. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977, 11-7-1977 Appendix- P

4. If DSC (excluding Mathematics) is Physics, then 1 Tutorial be added.

5. In Tutorial for Mathematics, * indicates that for the subject Mathematics, the strength of a batch of Tutorials for UG classes shall be 16 (Sixteen) with an addition of 10 percent with the permission of the Honourable Vice Chancellor (As amended by the Executive Council dated 27/28-4-1979).

Sant Gadge Baba Amravati University, Amravati

Examinations leading to the Degree of Bachelor of Science **APPENDIX – A3.2**

Three Years (Six Semesters) Degree Programmeunder Choice Based Credit System (CBCS)

Scheme of Teaching, Learning, Examination and Evaluation (B.Sc. -Excluding Mathematics) (Semester-III)

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	(DSC-13)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
2	Practical for (DSC-13), DSC-14		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
3	(DSC-15)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
4	Practical for (DSC-15), (DSC-16)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
5	(DSC-17)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
6	Practical for (DSC-17)-(DSC-18)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
7	Environmental Studies-I (AEC)		2	-	-	2	1.5	-	1.5	2	College Level examination				50	20	p
8	Open Elective Course Optional		GIC/MOOC/Skill Course														
	Total								21.75						500		

L: Lecture, T: Tutorial, P: Practical

Note : 1. Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 120 hrs, cumulatively entailing 4 Credits. It's credits and grades will be reflected in final semester IV credit grade report.

2. OEC (Optional) can be studied (through SWAYAM/MOOC, etc.) during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

3. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977, 11-7-1977 Appendix- P

4. If DSC (excluding Mathematics) is Physics, then 1 Tutorial be added.

Examinations leading to the Degree of Bachelor of Science **APPENDIX – A4.2**

Three Years (Six Semesters) Degree Programmeunder Choice Based Credit System (CBCS)

Scheme of Teaching, Learning, Examination and Evaluation (B.Sc. -Excluding Mathematics) (Semester-IV)

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams	Examination & Evaluation Scheme						
			Teaching Period Per week				Credits			Hrs.	Maximum Marks					Minimum Passing	
			L	T	P	Total	Theory/ Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	Practical		Total Marks	Marks	Grade
													Internal	External			
1	(DSC-19)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
2	Practical for (DSC-19), DSC-20		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
3	(DSC-21)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
4	Practical for (DSC-21), (DSC-22)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
5	(DSC-23)		6	-	-	6	4.5	-	4.5	3	80	20	-	-	100	40	P
6	Practical for (DSC-23)-(DSC-24)		-	-	6	6	-	2.25	2.25	3	-	-	25	25	50	25	P
7	Environmental Studies-II (AEC)		2	-	-	2	1.5	-	1.5	3	70	30	-	-	100	40	P
8	Open Elective Course Optional		GIC/MOOC/Skill Course														
	Total								21.75						550		

L: Lecture, T: Tutorial, P: Practical

Note : 1. Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 120 hrs, cumulatively entailing 4 Credits. It's credits and grades will be reflected in final semester IV credit grade report.

2. OEC (Optional) can be studied (through SWAYAM/MOOC, etc.) during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

3. Teaching period in the various subjects in the faculty of science shall be as prescribed by the executive council dated 1/2-4-1977, 11-7-1977 Appendix- P

4. If DSC (excluding Mathematics) is Physics, then 1 Tutorial be added.

SANT GADGE BABA AMRAVATI UNIVERSITY GAZETTE - 2023 - PART ONE – 1404

Sant Gadge Baba Amravati University, Amravati

Faculty of Science and Technology, Programme: BCA

POs of B.C.A. Programmme:

The under-graduate students, after completing their study of B.C.A. programme would acquire following characteristics attributes of science graduate.

PO-1 Scientific Knowledge and Experimental Skills : The graduates must be able to demonstrate fundamental concepts in computer science and apply it in relative specialized areas like research & development, teaching and government, social or public services.

PO-2 Communication skills : The graduates must be able to transmit complex technical information in clear and concise manner relating to computer hardware, software and its applications.

PO-3 Critical Thinking & Problem Solving Ability: The graduates must be able to employ critical thinking and problem solving skills to find appropriate solutions for the given problems in the fields of computer technology.

PO-4 Team leading and working capability: The graduates must be capable to work independentlyas well as a team leader or a member.

PO-5 Project Management: The graduates must be able to identify need, scope and beneficiaries to develop a project by observing responsible & ethical conduct and also with cyber security and safety.

PO-6 Digital Proficiency to use Modern Digital Tools: The graduates must be capable to learn and use modern technology like data mining, handling & management, robotics and artificial intelligence.

PO-7 Environmental and Societal Consciousness: The graduates must be aware about the environmental & the societal problems and must be capable to use and demonstrate the acquired knowledge to address these problems and to find appropriate solutions thereof.

PO-8 Ethics and Human values: The graduates must be capable to think and behave rationally onthe ethical issues they come across at their work place. Also, the graduates should adopt human values to keep harmony with individuals and with human beings.

PO-9 National perspective: The graduates must be able to develop national perspective for their career in the chosen field so that they could play a vital role in contributing in national development.

PO-10 Lifelong Learning: The graduates should adopt lifelong learning to keep pace with emerging trends in technology and research.

PSOs of B.C.A. Programme:

The student graduating with the Degree BCA should be able to

PSO-1	Focus on preparing student for roles pertaining to computer applications and IT industry
PSO-2	develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT
PSO-3	Get skill and information not only about computer and information technology butalso in common, organization and management.
PSO-4	Learn applications, packages, programming languages and modern techniques ofIT
PSO-5	work as software programmer, system, database and network administrator, web designer, Application developer, faculty for computer science and computer applications, Web Designer, Network Analyst, Test Engineer, DBA, Technical Support Engineer, Quality Assurance, data analyst, data Scientist, researcher etc.
PSO-6	get information about various computer applications, latest development in IT and communication Technology in current era.
PSO-7	use knowledge of the networking, computer graphics, web development, trouble shooting, and hardware and software skills.
PSO-8	use knowledge in various domains to identify research gaps andhence to provide solution to new ideas and innovations
PSO-9	assess the hardware and software aspects of computer systems, structure and development methodologies of software systems.
PSO-10	apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.

Employability Potential of the Programme:

B.C.A. programme will be full-time 3 years bachelor's degree course of computer application. This course is designed specifically to cater the need of skilled software developers. The programme is recognized by M.S.Govt. And Affiliated to Sant Gadge Baba Amravati University. The Course develops high degree of technical skill in the Students, so that they can face the challenges of the industries. The Computers/ Computer Knowledge has become as indispensable in today's world as food, shelter, and clothing. The service sector in the worked is experiencing a boom and India has emerged as world leader. The BCA course covers the technical as well as managerial aspects of the computer applications. It offers advanced study into the conceptual basis of information systems as a discipline and introduces students to research methods and current developments.

Computers have become an integral part of our life. Almost every individual wants tobe a computer professional. The craze for the courses is increasing due to growing job prospects that it has. B.C.A. forms the base of a computer professional versatile is use ofcomputersinalmostallfieldofcomputerapplication.ThemainemphasisoftheProgramme is an applied computer use in various fields. Companies who wants, to take benefit of the new information technologies and communication systems need expert professionals, who can apply computer science principles to solve problems produced bythe interface between business and technology. B.C.A. Programme is an undergraduate program with Choice Based Credit System(CBCS) scheme where students are exposed to various areas of computer applications including the latest developments in the industry. Theprogrammeimpartscomprehensiveknowledgewithequalemphasisontheoryandpracticein the field of information technology.

The Indian economy is on an extremely positive note; growth is across sectors, both in traditional industries and new sectors. In such an environment, corporate India will need young and talented youth to actively participate, manage, design, develop and lead several IT initiatives. It has not been better than this for aspirants of BCA education.

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-I)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Per week				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
1	Communication Skill	1BCAE1	3		-	3	3	-	3	2	40		1	-	-	50	20	P
2	Communication Skill in English (AEC)	1BCAE2		1	-	1		1	1	--		10	1	25	-	25	10	P
3	DSC-1 (T) Fundamentals of Computers	1BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC-2(T)Structured Programming Paradigms	1BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC-3(T)Data Structure	1BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4(T)Fundamentals of Electronics in Computer	1BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC-1(P) Computer Hardware Software Troubleshooting	1BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC-2(P)Data Structure	1BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC-3 (P)Fundamentals of Computer Electronics	1BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	DSC- 1 (P)Generic Open Elective I(GOEC) 1-Computer Fundamentals 2-IT and BDP	1BCAG	2	-	-	2	2	-	2	2	College Level Exam.					50	20	p.
11	**Induction Programme***	BCAIP				30 hrs (beginning of 1 Semester classes)		1*	1									P
	Total		**25**	**1**	**12**	**38**	**25**	**7**	**33**				**6**			**675**		
	BCA-Sem-1 Total Credit		**39**	**Total Marks**				**675**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-II)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
1	Communication Skill	2BCAE1	3		-	3	3	-	3	2	40		1	-	-	50	20	P
2	Communication Skill in English (AEC)	2BCAE2		1	-	1		1	1	--		10	1	25	-	25	10	P
3	DSC- 1(T) Computer System and Interface	2BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Data Base Managemant System	2BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Object Oriented Programming	2BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T) Fundaentals of Computational Mathematics	2BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Computer Interfacing	2BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) DBMS	2BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) CPP	2BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Generic Open Elective I(GOEC) 1-Fund. Of C Programming 2-e-Commerce	2BCAG	2	-	-	2	2	-	2	2	College Level Exam.					50	20	p.
	Total		**25**	**1**	**12**	**38**	**25**	**7**	**32**				**6**			**675**		
	BCA-Sem-2 Total Credit		**38**	**Total Marks**				**675**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-III)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration ofExams in Hrs.	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
3	DSC- 1 (T) Operating System	3BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Core Java Programming	3BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Fundamentals of Open Source Software	3BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T)Pythan Programmin	3BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Operating System	3BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) Java Programming	3BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) Python Programming	3BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Environmental Studies (AEC)	3BCAENV	2	-	-	2	2	-	2	2								
	Total		**22**	**0**	**12**	**34**	**22**	**6**	**28**				**4**			**550**		
	BCA-Sem-3 Total Credit		**32**	**Total Marks**				**550**										

L: Lecture, T: Tutorial, P: Practical
Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.
- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-IV)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
3	DSC- 1 (T) Data Communication Network	4BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Web Technologies	4BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Adv Java Programming	4BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T) Fundamentals of Data Science	4BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Web Technologies	4BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) Adv Java Programming	4BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) Data Science using Python	4BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Environmental Studies (AEC)	4BCAENV	2	-	-	2	1	-	1	3	70	30	1	-	-	100	40	P
	Total		**22**	**0**	**12**	**34**	**21**	**6**	**27**				**5**			**650**		
	BCA-Sem-4 Total Credit		**32**	**Total Marks**				**650**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Faculty:--Science and Technology

Programme: BCA

Part B

Syllabus Prescribed for First Year UG ProgrammeProgramme: BCA

Semester 1

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
1BCA1	**Fundamentals of Computers**	**60**

Course Pre-requisites:

1. The student should have the basic knowledge of mathematics.
2. The student should be able to do computations.
3. The students should pose the logical thinking ability.

Course Objectives:

Upon successful completion of the course, students would be able to

1. acquire the basic knowledge about computer system functions.
2. learn the basic knowledge about various components, capabilities and limitations of computer.
3. understand the various hardware and software components of computer.

Unit	Contents
Unit I	**Computer Basics:** Definition of Computer, Applications. Characteristics of Computer, block diagram of computer, Types of Computer. **Memory** : Primary Memory : RAM , ROM , PROM , EPROM,EEPROM and Cache memory **Input Devices:** Keyboard, Mouse, Joystick, Scanner, Mic, Display Devices (LED & Touch Screen). **Output Devices:** Speaker, Plotter, Printer, Types of Printer. **Secondary storage**: Hard disk, SSD, PD, and other types of secondary storage devices. **(12 Hours)**
Unit II	**Operating System**: Definition, Functions of OS, Types of OS. **Windows:** Introduction Features of windows, Customizing Desktop, Creating shortcuts, moving, deleting icons. **Windows Explorer**: Copy, Rename, Move, Print, Delete, Zip, Unzip operations on files and folder, file properties. **Standard Folders**: My computer, My documents, Control Panel, Recycle bin. **Windows Accessories**: Paint, Notepad, Calculator. **(11 Hours)**
Unit III	**Computer Network and Internet:** Introduction to computer Network, Types Of Networks: LAN, WAN, MAN, Network topologies, Advantage of Network. **Internet:** Introduction, The World Wide Web, Internet Application. Types of Internet connections: Direct, dial-up, Broadband, ISDN Connection. Protocols: TCP/IP, FTP, HTTP, Search Engines, Browsers. **(11 Hours)**
Unit IV	**Word Processing** : Page setup, views, Text formatting using Font Colour, Styles, Autocorrect , Spell- check, Grammar, Table, Tabs, Indentation, Hyperlink, Bullet and Numbering, Mail Merge, Print Preview , Printing of Document,. **Power point:** Create, Modify, Delete Presentations, Inserting Image, Sound, Clips, Charts, Animation Effects and Transition, and Slide Show. **(11 Hours)**
Unit V	**Spread Sheets:** Introduction, Features, Creating and Formatting Worksheets, Inserting Functions, Formula and Charts. Autofill, Conditional Formatting, Sorting, Searching, Validating and Filtering Data, Macros, Grouping and Sub-Totals, Pivot Table. **(11 Hours)**

***SEM: A**ssignment, Class test, Seminar, Study tour, Industrial visit, Field work, Group discussion or any other innovative practice/activity	
Cos: 1. To be able to draw upon foundational knowledge, learn, adapt and successfully bring to bear analytical and computational approaches on changing societal and technological challenges 2. To assess the curricular skills acquired by students at college level through Assignments, Unit test, Internal Test, Group Discussion/Seminar/Mini Project, Study Tour	
**Activities	1.writing algorithms 2.Drawing flowcharts 3.writing and debugging programs **(4 hours)**

Course Material/Learning Resources:

Text Books :

1. Fundamentals of Computer: V. Rajaraman (Prentice Hall Pub.)
2. Learning to use the Internet and introduction with Example and Exercises: Ackermann (BPB Pub.)
3. Microsoft office 365: A complete guide to word, excel and power point 365 for beginners and pro. By Matt Vic

Reference Books:

1. Introduction to Computers: Roger Hunt and John Shelly
2. The Internet Complete Reference: Harley Hahn (Tata Mc-Graw Hill Pub.)

Weblink to Equivalent MOOC on SWAYAM if relevant:

1. https://www.onlinecoursereport.com/free/computer-science/
2. https://www.classcentral.com/course/swayam-computer-fundamentals-13950
3. https://www.coursera.org/courses?query=computer%20fundamentals
4. https://www.edx.org/learn/computer-programming
5. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview

Weblink to Equivalent Virtual Lab if relevant:

1. https://www.bestcolleges.com/blog/platforms-for-online-courses/
2. https://library.educause.edu/topics/teaching-and-learning/massive-open-online-course-mooc

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=tIfRDPekybU
2. https://www.youtube.com/watch?v=jj2iHreoCVk
3. https://www.youtube.com/watch?v=W5JM7FntM94

Sant Gadge Baba Amravati University, Amravati

Part A

Faculty:- Science and Technology

Programme:- Bachelor of Computer Application

Part B

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Semester I

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
1BCA2	Structured Programming Paradigms	60

Course Outcomes (COs)

Upon successful completion of the course, students would be able to

1. Formulate simple algorithms for arithmetic and logical problems
2. Translate the algorithms to programs (in C language)
3. build the basic skills of programming.
4. acquire the importance of C programming using various methodologies.
5. learn the advance concepts of programming like structure, string handling,file handling.

Unit	Content
Unit I	**The Basics Of Programming –** Problem Solving Through Programs- Instructions and Programs, Designing Algorithms/Pseudo Code, Flowchart, Programming Languages and Their Types, Assemblers, Compilers, Interpreters, Program Design, Coding, Compilation, Execution, Testing, Debugging, Documentation; Programming Paradigms : Imperative, Declarative, Procedural, Object Oriented, Advantages and Disadvantages; Programming Approaches – Top Down, Bottom Up, Structured Programming, Features **(11 Periods)**
Unit II	**C Programming** – Character set, Tokens- Data Types, Identifiers, Variables, Constants; Input / Output Statements, format specifiers and Escape sequences; Operators and their types, Precedence and Associativity of Operators, Type Conversions- Implicit and Explicit. **Control structures:** if, if-else, nested if, if-elseif-else, Switch statement, for, while, do-while, nested loops, break, continue, goto. **(12 Periods)**
Unit III	**Arrays, Functions and Pointers using C:** Arrays, dimensions of arrays, Character and String arrays; Modular Programming with Functions- Functions and Parameters, Defining and calling functions, Function calls by Value and Reference, Return statement, Recursion; Pointer variables, address and indirection operators, Pointer assignment, Pointer Arithmetic, Pointer asargument, Pointer as return values, Using pointers for array processing **(11 Periods)**
Unit IV	**Strings, Structures and Unions, Memory Allocation in C:** String literals, variables, Reading and writing strings, operations on strings. **Structures:** prototype, Array of structures, Passing Structures to functions, nested Structure; Union, Dynamic Memory Allocation, Deallocation **(11 Periods)**
Unit V	**The Preprocessor and File Handling in C** The Preprocessor, Preprocessor Directives, Macro definitions, general properties of macros, #define; **File Handling** : Introduction to Files, File opening modes, file operations, command line arguments, Random access files, File pointer, Input/Output Functions. **(11 Periods)**
***SEM :** Assignment, Class test, Attendance, Seminar, Study tour, Industrial visit, Field work, Group discussion or any other innovative practice/activity	

COs: 1. To be able to comprehend foundational knowledge, learn, adapt and successfully apply analytical and computational approaches on changing societal and technological challenges 2. To assess the curricular skills acquired by students at college level through Assignments, Unit test, Internal Test, Group Discussion/Seminar/Mini Project, Study Tour	
**Activities	1. Drawing flowcharts for algorithms 2. Writing C programs using control structures **3.** Writing and debugging programs **(4 hours)**

Course Material/Learning ResourcesText books:

1. Brian W. Kernighan, Dennis M. Ritchie ,C Programming Language, 2nd Edition Prentice Hall; 2 edition (April 1, 1988)
2. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill
3. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill

Reference Books:

1. Yashwant Kanetkar, Let us C, 2nd edition, BPB publication, ,New Delhi, India, (1995).
2, K.R.Venugopal, S.R. Prasad, Mastering C, Tata Mc Graw- Hill ,New Delhi, India, (2008).
3. D. Ravichandran, Programming with C, First Edition,New Age Inetrnational Publication Limited, New Delhi, 2006
4.Sudhir Dawra, Mastering Graphics Programming in C, First Edition,Firewall Media-Laxmi Publications Private Limited, New Delhi, 2004.
5. H.M.Deitel, P.J.Deitel, C How to Program, Seventh Edition, 2011, Pearson Publication Limited, New Delhi, 2011.

Weblink to Equivalent MOOC on SWAYAM if relevant:

- https://www.classcentral.com/course/swayam-introduction-to-programming-in-c-2486
- https://swayamprabha.gov.in/asset/new_team/images/course_files/R12-Introduction%20to%20Programming%20in%20C%20.pdf

Weblink to Equivalent Virtual Lab if relevant:

- https://www.programiz.com/c-programming/online-compiler/
- https://www.onlinegdb.com/online_c_compiler
- https://www.tutorialspoint.com/compile_c_online.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

Sant Gadge Baba Amravati University, Amravati

Faculty: Science and Technology

Programme: Bachelor of Computer Application

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application

Semester I : Data Structure

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
1BCA3	**Data Structure**	**60**

Course Learning Outcomes (Cos)

Upon successful completion of the course, students would be able to

1. Describe how arrays, linked structures, stacks, queues, and trees are represented in memory and design and implementation with the help of algorithms.
2. Design common applications for arrays, linked structures, stacks, queues and trees.
3. Prepare programs that use arrays, linked structures, stacks, queues, trees.
4. Demonstrate different methods for traversing trees.
5. Compare alternative implementations of data structures with respect to performance.
6. Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack.
7. Analyze the computational efficiency of the principal algorithms for sorting and searching.

Unit	Content
Unit I	**Introduction of Data structure:** Introduction, Definition, Types of data Structure, Data Structure Operations, Algorithms: Algorithmic notations, Control Structures, Complexity, time-space tradeoffs. **Arrays:** Introduction, Representation of linear array in memory, Multidimensional Arrays, operations on linear array: Traversing, Insert, Delete. **(12 periods)**
Unit II	**Stack:** Introduction of stack, Representation of Stack: Using arrays and Linked Lists, Operations on stack: push, pop, Stack applications, Infix to Postfix conversion of expression, Expression evaluation, Recursion. **Queues:** Introduction, Insert and Delete operations, Queue implementationusing array, Types –Priority Queue, Circular queue, Dequeue, Queue applications**.** **(11 periods)**
Unit III	**Linked list:** Introduction, Memory representation of linked list, free storage list, operations on linked list: traversing, searching, insertion and deletion, Header linked list, Two-Way list, Stacks and Queues as Linked Lists. **(11 periods)**
Unit IV	**Trees:** Introduction and Tree terminologies, Types of Binary tree, Representation of Trees: Using arrays and Linked Lists, Types of Traversal: Preorder, Inorder, Postorder, Applications of Binary trees, Binary Search Tree (BST): Introduction and definition, Expression tree. **(11 periods)**
Unit V	Searching, Concept and need, Techniques, Linear search, Binary search,Indexed sequential search, Sorting, Concept and Need, Performance criteria, Bubble sort, Insertion Sort, Selection Sort, Shell Sort, Quick Sort, Heap Sort, Merge Sort. **(11 periods)**
***SEM: A**ssignment, Class test, Seminar, Study tour, Industrial visit, Field work, Group discussion or any other innovative practice/activity	

COs: 1 To be able to use foundational knowledge, learn, adapt and successfully apply analytical and computational approaches on changing societal and technological challenges.	
**Activities	1. writing algorithms 2. Implementation of Algorithms **3.** writing and debugging programs **(4 hours)**

Course Material/Learning Resources

Text books:

1) Data Structures by Seymour Lipschutz. Schaum's Series

Reference Books:

1) Fundamentals of Computer Algorithm : Horowite & Sahani
2) Data structures and Algorithms in C++ : B.R. Weiss Pearsons.
3) Introduction to Data Structure in C: Kamthane (Pearson)
4) Introduction to Data Structure : Bhagat Singh, Nops
5) Data Structure by Trampley and Sorcnson.
6) Data Structure by Horowite & Sahani.

Weblink to Equivalent MOOC on SWAYAM if relevant:

Weblink to Equivalent Virtual Lab if relevant:

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

Sant Gadge Baba Amravati University, Amravati

Faculty:- Science and Technology

Programme:- Bachelor of Computer Application (BCA)

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester I

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
1BCA4	**Fundamentals of Electronics in Computer Sciences**	**60**

Course Outcomes (COs)

Upon successful completion of the course, students would be able to

1. learn the binary numbers used in computer system.
2. understand how logic circuit works inside microprocessor.
3. understand concepts of digital systems.
4. understand how microprocessor works inside computer system.
5. use the concepts of assembly language programming.

Unit	Content
Unit I	**Number systems**: Decimal, Binary, Octal and Hexadecimal, Binary arithmetic Operation: addition, subtraction, multiplication and division, Compliments: 1's and 2's compliments, subtraction by 1's and 2's compliment method, Conversion: Binary to decimal, octal, hexadecimal conversion and vice versa. Octal to decimal, hexadecimal, binary conversion and vice-versa, hexadecimal to octal, decimal, Binary and vice versa. **(12 Periods)**
Unit II	**Logic operation and logic gates:** OR, AND, NOT, NAND, NOR, and EX-OR, EX-NOR gates and their truth table. **Combinational Logic Circuits:** Half Adder, full adder, half Subtractor and full Subtractor. **(11 Periods)**
Unit III	**Boolean Algebra**: DeMorgan's Theorem, Boolean Laws, Reduction of Equation using Boolean Laws. K-Map: reduction of equation using K-Map, Multiplexer and De-multiplexer . **(11 Periods)**
Unit IV	**Sequential Logic Circuits:** Construction, working and Truth Table of R-Clocked R-S, JK, D and T- type, JKMS Flip Flop, Concept of preset and clear terminals, Race around Condition in JK FF. **(11 Periods)**
Unit V	**Registers:** SISO,SIPO,PISO,PIPO. Counters-4 bit Binary Up and Down Counter. 3 bit Binary Up-Down counter. **(11 Periods)**
***SEM** Assignment, Class test, Attendance, Seminar, Study tour, Industrial visit, Field work, Group discussion or any other innovative practice/activity	
COs: 1. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. 2. To understand and examine the structure of various number systems and it application in digital design. 3. The ability to understand, analyze and design various combinational and sequential Circuits.	
**Activities	1. Inter-conversions of number systems 2. Design and Verification of logic gates 3. Assembly language programming - 8085 microprocessor 4. Assembly language programming - 8086 microprocessor **(4 Hours)**

Course Material/Learning ResourcesText Books:

1. R. P. Jain :Modern Digital Electronics:4 Th edition Tata Mc-Graw Hill(2010)

2. A. Anand Kumar :Fundamental of Digital Circuits:2 nd edition (PHI)(2003)

3. A. P. Malvino, D. P. Leach: Digital principles and applications 4th edition: McGraw Hill (1975)

4. B .Ram: Fundamental of Microprocessor and Microcomputer 6 th edition:Dhanpatrai Publication(2006)

5. Atul P.Godse/Mrs.Deepali A.Godse-Microprocessor and Interfacing 1st edition :Techinal publication pune (2009)

6. James L.Antonakos,The Pentium Microprocessor 1 st edition:Prentice hall(1997)

References Books:

1. M.B.Matsagar,V.S.Kale: Principles of digital Electronics, Vision publication

2. Floyd,Jain : Digital fundamentals, Pearson

3. S.P.Bali, Y.N.Bapat :Electronic circuits and systems Analog and digital, Tata McGraw Hill

4. B.S.Nair :Digital electronics and logic design, Prentice hall

5. Malvino,Brown :Digital computer electronics, Tata McGraw Hill

6. C.V.Dhuley and V. M. Ghodki :Fundamentals of Digital Electronics

7.Barry B. Brey: The Intel Microprocessors 6Th edition:Prentice hall(2007)

8.Douglus V Hall: Microprocessor and Interfacing 2nd edition :Glencoe(1992)

9.K.M.Bhurchundi and A.K.Ray:Advanced Microprocessors & Peripherals 3rd edition:Tata Mcgraw hill(2013)

Weblink to Equivalent MOOC on SWAYAM if relevant:

https://onlinecourses.nptel.ac.in/noc20_mm02/preview

https://onlinecourses.nptel.ac.in/noc21_mm03/preview

Weblink to Equivalent Virtual Lab if relevant:

https://www.programiz.com/c-programming/online-compiler/
https://www.onlinegdb.com/online_c_compiler
https://www.tutorialspoint.com/compile_c_online.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

https://www.youtube.com/results?search_query=fundamentals+of+electronics

https://www.youtube.com/watch?v=Hq_8zewfMpY

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Faculty: Science & TechnologyProgramme:-

Communication Skills in English

Semester 1

Course Learning Outcome /CO

At the end of the Course, student would be able to:

CO1 understand communicative skills of English Language.

CO2. apply the four skills of language in his daily inter-personal communications.

CO3. formulate/ compose his own sentences and able to speak English Language.

CO4. develop communicative competence in students.

CO5. converse with other students in English.

CO6. communicate their ideas, thoughts and concepts properly in English.

B. C. A. I Semester I Communication Skills in English

Course Title	**Communication Skills in English**
Course Code	1BCAE1
Course Category:	Theory
Type of Course:	Theory + Practical
No. of Credits:	Theory - 03 + Tutorial – 01(Each batch of 16 students)
No. of Lectures:	Theory - 50 + Tutorial -12
Course Assessment:	End Term: 40 Marks (University level exam) SEM (Internal): 10 Marks (College level evaluation) AEC (Internal) : 25 Marks (College level evaluation)
Course Objective:	To train and prepare the students to seek and find employment in various field. To develop communicative competence in students To impart knowledge, ideas and concepts in the technicalities of proper pronunciation, structure, appropriate use and style of the English language as well as the application areas of English Communication. To expose the students to the employment opportunities, challenges and job roles.
Course Outcomes:	At end of the course students would be able to CO1 understand communication skills of English language CO2. apply the four skills of language in his daily routine. CO3. formulate/ compose his own sentences and able to speak English Language.CO4. collaborate with others students in English. CO5. communicate properly their ideas and concepts in English.

***Syllabus for B.C.A. Part-I* Semester – I**

Subject: Communication Skills in English

Code : Lecture

Unit I : *11*

1) Articles
2) Prepositions
3) Tenses
4) Subject – Verb Agreement

Unit II : *11*

1) Meeting People
2) Exchanging Greetings and Taking Leave
3) Introducing Yourself

Unit III : Prose *11*

1) The Home Coming – Rabindranath Tagore
2) A Lesson My Father Taught Me – APJ Abdul Kalam
3) How I Became a Public Speaker – George Bernard Shaw

Unit IV : Poetry *11*

1) The quality of Mercy – William Shakespeare
2) The Mountain and the Squirrel – R.W. Emerson
3) Where the Mind is Without Fear – Rabindranath Tagore

Skill Enhancement Module *06*

1) Spot Visit and preparing a report – Visit to Super Market, Bus Stand, Railway Station, Bank, Medical Shop, Bakery etc.
2) Interview of a dignitary and writing a report in dialogue form
(Skill Enhancement module will be of 25 marks. This module will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion, Study tour, MCQ, Open Book exam (OBE), etc.)

Internal Assessment:

a) Class Test 5 Marks
b) Viva-Voce 5 Marks

(For internal assessment the subject teacher shall be the sole examiner.)

Text Book Prescribed :

Pathmaker: A Textbook for College Students **[ISBN 989354421778] Edited by Board of Editors, Sant Gadge Baba Amravati University, Amravati. Publisher : Orient BlackSwan Pvt Ltd**

B. Sc. I Semester II Communication Skills in English

Course Title	**Communication Skill**
Course Code	
Course Category:	
Type of Course:	Theory + Practical
No. of Credits:	Theory - 04 + Tutorial – 01(Each batch of 16 students)
No. of Lectures:	Theory - 60 + Tutorial -15
Course Assessment:	End Term: 40 Marks (University level exam) SEM (Internal): 10 Marks (College level evaluation) AEC (Internal) : 25 Marks (College level evaluation)
Course Objective:	To train and prepare the students to seek and find employment in various field. To develop communicative competence in students To impart knowledge, ideas and concepts in the technicalities of proper pronunciation, structure, appropriate use and style of the English language as well as the application areas of English Communication. To expose the students to the employment opportunities, challenges and job roles.
Course Outcomes:	➢ At end of the course students would be able to CO1 Understand the paragraph, prose, poetry and communication skills CO2. Apply the four skills of language in his daily routine. CO3. Formulate/ compose his own sentences and able to speak English Language. CO4. Collaborate with others students in English. CO5. Communicate properly their ideas and concepts in English.

***Syllabus for B.C.A. Part-I* Semester II**

Subject: Communication Skills in English

Text Book Prescribed : *Pathmaker: A Textbook for College Students* [ISBN 989354421778] Edited by Board of Editors, Sant Gadge Baba Amravati University, Amravati

Publisher : Orient BlackSwan Pvt Ltd

Code :

Unit I :

1) Question Tags
2) Synonyms and Antonyms
3) Prefixes, Suffixes, Zero Suffix and Infix

Unit II :

1) Making Requests and Responding to Requests

2) Thanking Someone and Responding to Thanks
3) Developing a Thoughts

Unit III : Prose

1) On the Rule of the Road – A.G. Gardiner
2) A Simple Philosophy – Seathl
3) The Thief – Ruskin Bond

Unit IV : Poetry

1) The World is Too Much With Us – William Wordsworth
2) Love's Philosophy – P.B.Shelley
3) Success is Counted Sweetest – Emily Dickinson

Unit V: Skill Enhancement Module *15*

4) Blog Writing
5) Presentation on a topic from prescribed prose/poem

(Skill Enhancement module will be of 25 marks. This module will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion, Study tour, MCQ, Open Book exam (OBE), etc.)

Internal Assessment:

a) Class Test 5 Marks
b) Viva-Voce 5 Marks

(For internal assessment the subject teacher shall be the sole examiner.)

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester 1 : LAB 1

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
1BCALAB1	**LAB-1 Computer Hardware Software Troubleshooting**	**4 periods per batch**

COs

Upon successful completion of the course, students would be able to

1. get Knowledge of Computer Hardware
2. Identify computer hardware Issues/Problems
3. determine faulty Computer hardware
4. Know Basic computer troubleshooting tips
5. get Knowledge of Operating System and device Drivers
6. Identify hardware Peripherals
7. Understand basic knowledge of safeguarding hardware
8. Apply the knowledge to repair/maintain a computer.

*** List of Practical/Laboratory Experiments/Activities etc.**

Sr.No.	**Name of Program/ Experiment**
1	Check Front panel indicators & switches and Front side & rear side Connectors.
2	Assembling of Computer hardware
3	Familiarize the computer system Layout: Marking positions of SMPS, Motherboard,SSD, HDD, and add on cards.
4	Configure BIOS setup program and troubleshoot the typical problems using BIOSutility.
5	Formatting Hard Disk
6	Partition of Hard Disk
7	Installation of Hard Disk and configure to the Pc's
8	Installation of Operating System.
9	Installation Audio, Video and Network Drivers
10	Printer Installation and Servicing and troubleshoot
11	Install and configure Scanner, Web cam, Cell phone and bio-metric device withsystem and troubleshoot the problems
12	Assemble a system with add on cards and check the working condition of the systemand install OS.
13	Install and Configure Dual OS Installation
14	Assembling and Disassembling of Laptop to identify the parts and to install OS andconfigure it.
15	Check Basic system requirements for software Installation.
16	Download a software and install and uninstall the software on the system.
17	Identify the various problems while installing the software.
18	Installation of sharing software (Any-Desk and Team viewer)
19	Installation of Anti-viruses

20	Installation of Modem, Router

Sant Gadge Baba Amravati University, AmravatiSyllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application

Semester I

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
1BCALAB2	**LAB-2 Data Structures Using C**	**4 periods per batch**

COs

Upon successful completion of the course, students would be able to demonstrate

1. design and analyze the time and space efficiency of the data structure.
2. identity the appropriate data structure for given problem.
3. Have practical knowledge on the applications of data structures
4. implement linear and non-linear data structure operations using C programs
5. solve problems implementing appropriate data structures
6. implement sorting and searching algorithms using relevant data structures

*** List of Practical/Laboratory Experiments/Activities etc.**

Sr.No.	Name of Program / Experiment
1	Design Program to find sum of N number
2	Design Program to find factorial of N
3	Design Program to find greatest amongst three given number
4	Implementation of traversing technique in array
5	Implementation of insertion technique in array
6	Implementation of deletion technique in array
7	Implementation of PUSH and POP operations on stack.
8	Implementation of insertion and deletion technique in queue
9	Implementation of List data structure using i) array ii) singly linked list.
10	Implementation of recursive technique for finding factorial of an integer.
11	Implement stack using i) array ii) singly linked list
12	Implement Queue using i) array ii) singly linked list
13	Implementation of data insertion in Binary Search trees.
14	Implementation of data deletion in Binary Search trees.
15	Implementation of search in Binary Search trees.
16	Implementation of Linear search
17	Implementation of Binary Search using arrays.
18	Implementation of Bubble sort
19	Implementation of Selection sort
20	Implementation of Insertion sort

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester I :LAB3

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
1BCALAB3	**LAB-3 Fundamentals of Computer Electronics**	**4 periods per Batch**

COs

Upon successful completion of the course, students would be able to

1. design and verify truth table of logic gates.
2. design and verify truth table of flip flops.
3. design programs of 8085.
4. design programs of 8086.

*** List of Practical/Laboratory Experiments/Activities etc.**

Sr.No.	Name of Program / Experiment
1	Conversion of Decimal to Binary
2	Conversion of Decimal to Octal
3	Conversion of Decimal to Hexa -Decimal
4	Conversion of Binary to Decimal
5	Conversion of Binary to Octal
6	Conversion of Binary to Hex-Decimal
7	Demonstration of DeMorgan's Theorem
8	Design and verification of truth table of NAND gate.
9	Design and verification of truth table of OR gate.
10	Design and verification of truth table of NOT gate.
11	Design and verification of truth table of NOR gate.
12	Design and verification of truth table of NAND gate.
13	Design and verification of truth table of Ex-OR gate.
14	Design and verification of truth table of Ex-NOR gate.
15	Design and verification of truth table of RSFF.
16	Design and verification of truth table of DFF
17	Design and verification of truth table of JKFF
18	Design and verification of truth table of JKMS
19	Design and verification of truth table of Half Adder
20	Design and verification of truth table of Full Adder

Sant Gadge Baba Amravati University, Amravati

Faculty: Science and TechnologyProgramme: BCA

Generic Open Elective: Information Technology & Business Data Processing

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Part B

Syllabus Prescribed for 3 Year BCA UG Programme Open Elective 1

Programme: BCA Semester I

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
1BCAOE1	Information Technology & Business Data Processing	**60**

COs:

Upon successful completion of the course, students would be able to

Co 1: understand Concept of Information Technology
Co 2: understand Concept of Computerized Accounting and relevant software
Co 3: Work in Tally

Unit	Content
Unit I	Information – Concept, Characteristics, Data v/s Information, Uses of Information within the Organisation and outside the Organisation, Information Technology: Introduction, Definition of IT, Uses of IT in Business and Various Fields. **(12 periods)**
Unit II	Computerised Accounting Package: Computerised Accounting: Concept, Advantages and Limitation of Computer Accounting, Manual Vs Computerised Accounting. **(12 periods)**
Unit III	Accounting Software Tally 9.0 / Higher: Introduction, Features, Company info, Menu, Gateway of Tally Menu, Button Bar, Status Bar, Calculator. **(12 periods)**
Unit IV	Working in Tally Company Creation: Accounts only and Accounts with inventory. Groups: Concept, Predefined Groups, Creation of New Single Group, Display, Alteration and Deletion of Group. Ledgers: Concept, Single ledger Creation, Display,Alternation & Deletion. Vouchers: Concept, Types of Vouchers, Features andConfiguration of Accounting Vouchers, Transaction: Accounting Voucher, Inventory Vouchers. **(12 periods)**
Unit V	Reports and Advanced Features in Tally: Reports Display and Printing: Balance Sheet, Profit & Loss Account, Ratio Analysis, Stock Summary, Trial Balance, Day Book and Account. **(12 periods)**

Course Material/Learning Resources

Books

1. Data Export & Import: ODBC; Outward and Inward Connectivity, Data Import and
2. Export, Email, Upload, Backup, Restore.
3. Indian Tax System: TDS, TCS, GST: computation of GST

Book Recommendation-

1. Akash Gupta Computer and Financial Accounting with Tally 9.0, Published bydreamTech.
2. Pradeep Sinha and Priti Sinha: Fundamentals of Computing.

Sant Gadge Baba Amravati University, Amravati

Faculty: Science and Technology

Programme: Bachelor of Computer Application (BCA)

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester:

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
	Computer Fundamentals	**60 Periods**

COs:

Upon successful completion of the course, students would be able to

1 Familiarize with the general concept of Computers.
2 Learn the concept operating systems
3 Understand different types and structures of operating systems
4 Familiarize with MS-Office

Unit	Content
Unit I	Introduction to computer : History characteristics, classification of computer, block diagram of computer, Generations of computer, types of computer : Micro, mini, main and super. **(12 periods)**
Unit II	Input/Output Devices : Input Devices : Keyboard, MICR, OCR, Bar coding, mouse. Output Devices : Printers, types of printers, dot matrix printer, laser printer, inkjet printer, VDU (CRT,LCD). **(11 periods)**
Unit III	Memory : Memory cell, primary memory, secondary memory. Primary Memories : RAM, Cache, ROM family; Secondary Memories : CD, DVD, Flash Memory. **(11 periods)**
Unit IV	Operating System: Definition, Features of Operating System, Functions of Operating System. Types of Operating System: Single User, Multiuser, Multitasking, Time Sharing **(11 periods)**
Unit V	Basics of MS-Office: Creating and editing documents in MS-Word, Preparing tables, Preparing Presentations in MS-Powerpoint, Appling Slide Transitions, Preparing Worksheets in MS-Excel, Preparing Charts. **(11 periods)**
COs: 1. Familiarization with the terms like Operating System 2. Skill to work with MS-Word, Excel and PowerPoint. 3. Initiation into the process of writing business letters or job applications, tabulating data, preparing PPTs, etc. using MS-Office.	
**Activities	1. Preparing MS-Word Document 2. Preparing MS-Powerpoint Presentations **3.**Preparing Charts in MS-Excel **(4 periods)**

Course Material/Learning Resources

Text books:

1. Operating System Concepts: Silberschatz, Galvin and Gagne.
2. Computer Fundamental : B.Ram, Nas Age Publi.

Reference Books:

1. Operating Systems: Design and Implementation: Andrew S. Tanenbaum.
2. Fundamentals of Operating Systems: A.M. Lister, R.D. Eager
3. Fundamentals of Computer : V.Rajaraman, PHI Publi.
4. Computer Fundamentals : Preeti Sinha, BPB Publi.
5. Computer Fundamentals and C. Program : Dhamdhere.

Weblink to Equivalent MOOC on SWAYAM if relevant:

1. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview
2. https://www.classcentral.com/course/swayam-computer-fundamentals-13950

Weblink to Equivalent Virtual Lab if relevant:

1. https://www.vlab.co.in/broad-area-computer-science-and-engineering
2. http://vlabs.iitb.ac.in/vlabs-dev/labs_local/computer-networks/labs/explist.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=eEo_aacpwCw
2. https://www.youtube.com/watch?v=-AP1nNK3bRs&list=PLWPirh4EWFpF_2T13UeEgZWZHc8nHBuXp

Sant Gadge Baba Amravati University, Amravati

Faculty: Science and Technology

Programme: Bachelor of Computer Application (BCA)

Syllabus Prescribed for 3 Year BCA UG Programme Programme:

Semester:

Code of the Course/Subject	**Title of the Course/Subject**	**(Total Number of Periods)**
1BCAOE2	**Computer Fundamentals**	**60 Periods**

COs:

Upon successful completion of the course, students would be able to

1 Familiarize with the general concept of Computers.
2 Learn the concept operating systems
3 Understand different types and structures of operating systems
4 Familiarize with MS-Office

Unit	**Content**
Unit I	Introduction to computer : History characteristics, classification of computer, block diagram of computer, Generations of computer, types of computer : Micro, mini, main and super. **(12 periods)**
Unit II	Input/Output Devices : Input Devices : Keyboard, MICR, OCR, Bar coding, mouse. Output Devices : Printers, types of printers, dot matrix printer, laser printer, inkjet printer, VDU (CRT,LCD). **(11 periods)**
Unit III	Memory : Memory cell, primary memory, secondary memory. Primary Memories : RAM, Cache, ROM family; Secondary Memories : CD, DVD, Flash Memory. **(11 periods)**
Unit IV	Operating System: Definition, Features of Operating System, Functions of Operating System. Types of Operating System: Single User, Multiuser, Multitasking, Time Sharing **(11 periods)**
Unit V	Basics of MS-Office: Creating and editing documents in MS-Word, Preparing tables, Preparing Presentations in MS-Powerpoint, Appling Slide Transitions, Preparing Worksheets in MS-Excel, Preparing Charts. **(11 periods)**
COs: 1. Familiarization with the terms like Operating System 2. Skill to work with MS-Word, Excel and PowerPoint. 3. Initiation into the process of writing business letters or job applications, tabulating data, preparing PPTs, etc. using MS-Office.	
**Activities	1. Preparing MS-Word Document 2. Preparing MS-Powerpoint Presentations **3.**Preparing Charts in MS-Excel **(4 periods)**

Course Material/Learning Resources

Text books:

1. Operating System Concepts: Silberschatz, Galvin and Gagne.
2. Computer Fundamental : B.Ram, Nas Age Publi.

Reference Books:

1. Operating Systems: Design and Implementation: Andrew S. Tanenbaum.
2. Fundamentals of Operating Systems: A.M. Lister, R.D. Eager
3. Fundamentals of Computer : V.Rajaraman, PHI Publi.
4. Computer Fundamentals : Preeti Sinha, BPB Publi.
5. Computer Fundamentals and C. Program : Dhamdhere.

Weblink to Equivalent MOOC on SWAYAM if relevant:

1. https://onlinecourses.swayam2.ac.in/cec19_cs06/preview
2. https://www.classcentral.com/course/swayam-computer-fundamentals-13950

Weblink to Equivalent Virtual Lab if relevant:

1. https://www.vlab.co.in/broad-area-computer-science-and-engineering
2. http://vlabs.iitb.ac.in/vlabs-dev/labs_local/computer-networks/labs/explist.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=eEo_aacpwCw
2. https://www.youtube.com/watch?v=-AP1nNK3bRs&list=PLWPirh4EWFpF_2T13UeEgZWZHc8nHBuXp

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Sant Gadge Baba Amravati University, Amravati

Part A

Faculty: Science and TechnologyProgramme: BCA

Pre-requisites

Data Structures and Object Oriented Design

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: BCA

Semester II

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
2BCA1	**Computer System and Interfaces**	**60**

COs:

Upon successful completion of the course, students would be able to

1. Translate bit strings to numbers using unsigned, 2's complement, and IEEEstandard floating point representation systems.
2. Reverse engineer machine code and assembly code to a behavioral (high-level)descriptions.
3. Experiment to determine efficient storage (specifically heap memory)allocation strategies.

Unit	Content
Unit I	**8085 Microprocessor:** Architecture, Pin out Diagram, Pin configuration, opcode, operand, instruction word size, Instruction set, Classification of Instruction set. **(12 periods)**
Unit II	Addressing Modes of 8085, Assembly Language programming of 8 bits: Addition, Subtraction, Multiplication, Division, 1's and 2's Compliments, Logical and Relational operations. **(11 Periods)**
Unit III	**8086 Microprocessor**: Architecture, Pin out Diagram, Pin configuration, Registers, Instruction set, and Classification of Instruction set. **(11 Periods)**
Unit IV	**Interfacing:** Definition of interface. Types of interfaces. Keyboard and DisplayInterface (LED), Memory Controller(RAM & Cache), VGA Interface (RS232), USB for peripheral devices and Graphical User Interface. **(11 Periods)**
Unit V	Digital Camera Interface, Tactile Interface. Optical Reader Interface, Radio Frequency Interface, Blue tooth devices Interfacing. **(11 Periods)**
***SEM: A**ssignment, Class test, Seminar, Study tour, Industrial visit, Field work, Groupdiscussion or any other innovative practice/activity	
COs: 1. Understand the architecture of 8085. 2. Understand the architecture of 8086. 3. Understand the Interfacing of various devices. 4. Understand the role of interfacing	
**Activities	1. Performing Simple Program of 8085 2. Operations on various data **3.** Connect devices to Computer **(4 Periods)**

Course Material/Learning Resources

Text books:

1. Fundamentals of Microprocessor and Microcomputer
   By: B Ram. Publisher- Dhanpat Rai
2. Fundamentals of Computers
   By: V Rajaraman, Publisher-PHI

Reference Books:

Weblink to Equivalent MOOC on SWAYAM if relevant:

https://onlinecourses.swayam2.ac.in/cec20_cs11/preview

https://onlinecourses.nptel.ac.in/noc22_cs16/preview

https://www.classcentral.com/course/swayam-design-implementation-of-human-computer-interfaces-91655

Weblink to Equivalent Virtual Lab if relevant: http://vlabs.iitb.ac.in/vlabs-dev/labs/dblab/index.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

https://www.youtube.com/watch?v=qfUZBKDh9BY

https://www.youtube.com/watch?v=8UyJMiYqvs4

https://www.youtube.com/watch?v=ExxFxD4OSZ0

Sant Gadge Baba Amravati University, Amravati

Faculty:Science

Programme: BCA

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: BCA

Semester II

Code of the Course/Subject	**Title of the Course/Subject**	**(Total Number of Periods)**
2BCA2	**Database Management System**	**60 periods**

COs

Upon successful completion of the course, students would be able to

1. Understand the fundamental concepts of Database.
2. implement Normalization.
3. Understand the role and responsibility of Database Administrator,
4. Be Familiar with SQL, a basic language of database and enhance the skill to performthe queries by using functions.
5. Create and use of store procedure and functions with the help of PL/SQL.
6. understand, design and implement Cursor, procedure , functionand trigger.

Unit	**Content**
Unit I	**Introduction to Database:** Data, Information, Characteristics of Database, Need ofdatabase, and Relational Model. **Architecture of DBMS, DBA** and its Role, **Normalization:** 1NF, 2NF, 3NF. **(12 Hours)**
Unit II	**Structured Query Language (SQL):** Introduction, features, characteristics, advantages, data types, operators, Components of SQL: DDL, DML, DCL and TCLcommands, Select statement with Clauses(Order By, Group By, Having, Where) **(11 Hours)**
Unit III	**Constraint:** Data constraints and its type. Operations on Table with constraints. **Snapshot**, **Views:** Need, advantage & types. **Index:** Need, types and advantages, Joins and Union of Tables and its types. **In-built Functions:** Character Functions, Number Functions, Date Functions, Group Functions, and Conversion Functions, Use of alias, Null, NVL, sub queries. **(11 Hours)**
Unit IV	**Pl/SQL:** Introduction, data types**,** Block structure of PL/SQL, Exception handling **Cursor:** Types of cursor, attributes of Cursor, Life cycle of Cursor **(11 Hours)**
Unit V	**Procedure, Functions, Triggers:** Introduction, importance, types advantages & disadvantages. Creation of Procedure, Functions. **Backup and Recovery:** Introduction,Archive (Transaction) Logs, and Importance of Backups, Database Recovery, and Transaction Control. **(11 Hours)**
***SEM: A**ssignment, Class test, Seminar, Study tour, Industrial visit, Field work, Group discussionor any other innovative practice/activity	

COs: 1. Understand the fundamental concepts of Database. 2. Knowledge and ability to implement Normalization. 3. Understand the role and responsibility of Database Administrator, 4. Familiar with SQL, a basic language of database and enhance the skill to perform thequeries by using functions. 5. Creation and use of store procedure and functions with the help of PL/SQL. 6. Ability to understand, design and implementation of Cursor, procedure , function andtrigger.	
**Activities	1. Performing Simple queries 2. Operations on various objects 3. Execution of Function **4.** Execution of Stored objects **(4 Hours)**

Course Material/Learning Resources

Text books:

1. SQL, PL/SQL Programming – Ivan Bayross (BPB)
2. **SQL A Complete Reference, Alexis Leon, Mathews Leon (Tata McGraw Hill)**

Reference Books:

1. **Database Management System 3rd Ed. by Raghu Ramakrishnan and Johannes Gehrke**
2. Oracle PL/SQL Language Pocket Reference, 5E: A Guide to Oracle's Pl/SQL Language Fundamentals. by Steven Feurstein, Bill Pribyl and Chip Dawes (O'REILLY)
3.

Weblink to Equivalent MOOC on SWAYAM if relevant:

https://onlinecourses.swayam2.ac.in/cec19_cs05/preview

https://onlinecourses.nptel.ac.in/noc19_cs46/preview

https://onlinecourses.nptel.ac.in/noc20_cs60/preview

Weblink to Equivalent Virtual Lab if relevant: http://vlabs.iitb.ac.in/vlabs-dev/labs/dblab/index.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

https://www.youtube.com/watch?v=3EJlovevfcA https://www.youtube.com/watch?v=U2T_LCdO14Y

https://www.youtube.com/watch?v=7wj7UEdLI6U

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for 3 Year UG Programme

Programme: BCA

Semester: II

Code of the Course/Subject	**Title of the Course/Subject**	**(Total Number of Periods)**
2BCA3	**Object Oriented Programming Paradigms**	**60 periods**

COs:

Upon successful completion of the course, students would be able to

1. Learn evolution of programming paradigms
2. Understand the concepts of object-oriented paradigm
3. Apply object-oriented concepts in programming
4. Use object-oriented thinking in problem-solving

Unit	**Content**
Unit I	Software Evolution, Programming Paradigm Evolution - Imperative Programming, Declarative Programming, **OOP Paradigm**: Basic Concepts, Features, Advantages, Applications of OOP, Structured Vs OOP, Trending OOP Languages. **(11 Periods)**
Unit II	**OOP Concepts**- Data Abstraction and Encapsulation: Classes and Objects Introduction, Defining a Class, Function Prototype, Inline Function, Default Argument, Function Overloading, Constructors, Types of Constructors: Default, Parameterized and Copy Constructor, Access Specifiers, Memory Allocation for Objects, Objects as Function Arguments, Returning Objects From Functions. **(12 Periods)**
Unit III	**Inheritance:** Definition, Types of Inheritance: Single, Multiple, Hierarchical, Multilevel, Hybrid, Visibility Modes, Constructor and Destructor, Calling Sequence, Type Casting, Upcasting and Downcasting. **(11 Periods)**
Unit IV	**Polymorphism:** Compile Time, Run Time, Virtual Base Classes, Virtual Functions, Pure Virtual Functions, Early Binding and Late Binding. Function Overriding, Operator Overloading, Overloading Unary and Binary Operator, Rules for Overloading. **(11 Periods)**
Unit V	Static Data Members, Static Member Functions, Templates Functions, Template Classes, Abstract Base Class - Need, Design and Implementation, Object-Oriented Exception Handling- Errors as Objects, Classification of Errors, Introduction to Object-Oriented Analysis and Design - Studying Problem Domain, Finding Objects, Describing Objects, Finding Associations, Building Object Model, Open-Closed Principle. **(11 Periods)**
***SEM : A**ssignment, Class test, Seminar, Study tour, Industrial visit, Field work, Group discussion or any other innovative practice/activity	
COs: 1. Students are able to understand concept Object Oriented Programming 2. Students will execute simple programs of Object Oriented using Inheritance. 3. Students will execute simple programs of Object Oriented using Polymorphism.	
**Activities	1. Performing Simple Object Oriented program 2. Operations on various objects 3. Execution of Function 4. Implementation of Polymorphism, Inheritance **(4 Hours)**

Course Material/Learning Resources

Text books:

1. Object oriented programming with C++: E.Balagurusamy

Reference Books:

1. The Object-Oriented Thought Process, 5th Edition by Matt Weisfeld
2. An Introduction to Object-Oriented Programming: Timothy Budd
3. The C++ programming language: Bjarne Stroustrup
4. Programming principles and Practice using C++: Bjarne Stroustrup

Weblink to Equivalent MOOC on SWAYAM if relevant:

https://onlinecourses.nptel.ac.in/noc20_cs59/preview

https://onlinecourses.nptel.ac.in/noc19_cs48/preview

https://www.classcentral.com/course/swayam-programming-in-c-6704

https://www.naukri.com/learning/articles/oops-concepts-in-c-plus-plus/

Weblink to Equivalent Virtual Lab if relevant:

http://vlabs.iitb.ac.in/vlabs-dev/labs/oops/labs/exp1/index.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

Sant Gadge Baba Amravati University, Amravati

Faculty:- Science and Technology

Programme:- Bachelor of Computer Application (BCA)

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester II

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Hours)
2BCA4	Fundamentals of Computational Mathematics	60

Course Objectives (Cos)

Upon successful completion of the course, students would be able to

1. **Apply appropriate numerical methods to obtain approximate solutions to difficult mathematical problems.**
2. Understand relationship between variables using the method of Correlation and TrendFit Analysis.
3. **Develop formal reasoning among students using different techniques in numericalmethods.**
4. Understand regression and curve fitting with the help of least squares method.
5. **execute programs of various Numerical Methods and Statistical Techniques forsolving mathematical problems.**
6. write programs to draw various graphs.

Unit	Content
Unit I	**Introduction**: A simple mathematical model, Numerical data, Analog and digital computing, process of numerical computing, characteristics of numerical computing. **Roots of Equation :**Bracketing Methods – Graphical methods, Bisection method and numerical problems. Open Methods – Simple fixed point method, Newton-Raphson, method & its limitations and numerical problems. **(12 Periods)**
Unit II	**Solution of Linear Equations**: Existence of solution, solution by elimination, Basic Gauss elimination method, Gauss elimination with pivoting, Gauss- Jordan method. **Curve Fitting:** Linear regression, polynomial, regression, multiple linear regression. Linear Least Squares, non-linear regression, fitting of transcendental equations **(11 Periods)**
Unit III	**Interpolation:** Polynomial forms, linear interpolation, Newton's divided difference, interpolation polynomials, Lagrange's interpolating polynomials, interpolation with equidistance points. **Numerical Integration:** Meaning of numerical integration, general quadrature formula, trapezoidal rule, Simpson's 1/3 Rule, Simpson's 3/8 rule. **(11 Periods)**
Unit IV	**Functions and Relations:** Elementary counting principle, Function andcounting, Combinatorial argument, Principle of inclusion and exclusion. **Set Theory:** Types of sets, Basic Set Operations, Infinite sets andaccountability, Properties of countable sets. **(11 Periods)**
Unit V	**Graph Theory(a):** Definition, Types of Graphs, Isomorphism, Adjacencyand incidence matrix, Sub graphs, induced sub graphs, Complement of a graph, Union, intersection, ring-sum of two graphs. **Graph Theory (b) :** Edge sequences, Trail, path, circuit's definitions and elementary results, Isthmus, cut vertex, Vertex and edge connectivity, Dijkstra's shortest path algorithm **(11 Periods)**
***SEM A**ssignment, Class test, Attendance, Seminar, Study tour, Industrial visit, Fieldwork, Group discussion or any other innovative practice/activity	
COs: 1. To be able to draw upon foundational knowledge, learn, adapt and successfully bring to bear analytical and computational approaches on changing societal and technological challenges COs: 2. To assess the curricular skills acquired by students at college level through Assignments, Unit test, Internal Test, Group Discussion/Seminar/Mini Project, Study Tour	
**Activities	1. Finding root of equations with the help of online tools(ex. Online equationsolver) 2. Solving examples based on Gauss Elimination, Gauss-Jordan , etc. methods. **3.** Drawing graph with the help of C Program **(4 Periods)**

Course Material/Learning Resources

Text books:

1. Numerical Analysis by S. S. Shastri.
2. **Graph Theory with Applications to Computer Science and Engineering by Narsinghs Deo.**

Reference Books:

1. **Numerical Methods : E. Balguruswamy Publication-Tata Mc-Graw Hill.**
2. Elements of Discrete Mathematics by C. L. Liu

Weblink to Equivalent MOOC on SWAYAM if relevant:

1. https://onlinecourses.nptel.ac.in/noc20_ma33/preview
2. https://onlinecourses.swayam2.ac.in/cec20_ma11/preview
3. https://onlinecourses.nptel.ac.in/noc19_ma21/preview

Weblink to Equivalent Virtual Lab if relevant:

1. https://www.bestcolleges.com/blog/platforms-for-online-courses/

2. https://library.educause.edu/topics/teaching-and-learning/massive-open-online- course-mooc

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=O3U8fomrAug
2. https://www.youtube.com/watch?v=FET0SW991MQ
3. https://www.youtube.com/watch?v=QqhSmdkqgjQ

SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Faculty: Science & Technology

Programme:-

B. Sc. I Semester II Communication Skills in English

Course Title	**Communication Skill**
Course Code	2BCAE1
Course Category:	Theory
Type of Course:	Theory + Practical
No. of Credits:	Theory - 03 + Tutorial – 01(Each batch of 16 students)
No. of Lectures:	Theory - 50 + Tutorial -10
Course Assessment:	End Term: 40 Marks (University level exam) SEM (Internal): 10 Marks (College level evaluation) AEC (Internal) : 25 Marks (College level evaluation)
Course Objective:	To train and prepare the students to seek and find employment in various field. To develop communicative competence in students To impart knowledge, ideas and concepts in the technicalities of proper pronunciation, structure, appropriate use and style of the English language as well as the application areas of English Communication. To expose the students to the employment opportunities, challenges and job roles.
Course Outcomes:	Upon successful completion of the course, students would be able to ➢ CO1 Understand the paragraph, prose, poetry and communication skills CO2. Apply the four skills of language in his daily routine. CO3. Formulate/ compose his own sentences and able to speak English Language. CO4. Collaborate with others students in English. CO5. Communicate properly their ideas and concepts in English.

***Syllabus for B.C.A. Part-I* Semester II**

Subject: Communication Skills in English

Code :

Unit I :

1) Question Tags

2) Synonyms and Antonyms
3) Prefixes, Suffixes, Zero Suffix and Infix

Unit II :

1) Making Requests and Responding to Requests
2) Thanking Someone and Responding to Thanks
3) Developing a Thoughts

Unit III : Prose

1) On the Rule of the Road – A.G. Gardiner
2) A Simple Philosophy – Seathl
3) The Thief – Ruskin Bond

Unit IV : Poetry

1) The World is Too Much With Us – William Wordsworth
2) Love's Philosophy – P.B.Shelley
3) Success is Counted Sweetest – Emily Dickinson

Skill Enhancement Module 15

4) Blog Writing
5) Presentation on a topic from prescribed prose/poem
   (Skill Enhancement module will be of 25 marks. This module will be internally assessed flexibly on the basis of Class tests, assignments, seminar, reading material, project, survey, group discussion, Study tour, MCQ, Open Book exam (OBE), etc.)

Internal Assessment:

a) Class Test 5 Marks
b) Viva-Voce 5 Marks

(For internal assessment the subject teacher shall be the sole examiner.)

Text Book Prescribed :

Pathmaker: A Textbook for College Students **[ISBN 989354421778] Edited by Board of Editors, Sant Gadge Baba Amravati University, Amravati. Publisher : Orient BlackSwan Pvt Ltd**

Sant Gadge Baba Amravati University, AmravatiSyllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester II

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
2BCALA B1	**LAB-1**	**4 Periods per Batch**

Cos:

Upon successful completion of the course, students would be able to

1. Write ALP for 8085

2. Understand interfacing concepts

*** List of Practical/Laboratory Experiments/Activities etc.**

Sr.No.	**Name of Program/ Experiment**
1	Write an ALP for addition of 8 bit numbers
2	Write an ALP for Subtraction of 8 bit numbers
3	Write an ALP for Multiplication of 8 bit numbers
4	Write an ALP for Division of 8 bit numbers
5	Write an ALP for addition of 16 bit numbers
6	Write an ALP for Subtraction of 16 bit numbers
7	Write an ALP for Multiplication of 16 bit numbers
8	Write an ALP for Division of 16 bit numbers
9	Write an ALP for 1's compliment of 8 bit numbers
10	Write an ALP for 2's compliment of 8 bit numbers
11	Write an ALP for 1's compliment of 16 bit numbers
12	Write an ALP for 2's compliment of 16 bit numbers
13	Write an ALP for Right shifting of 8 bit numbers
14	Write an ALP for Left Shifting of 8 bit numbers
15	Write an ALP for addition of Real 8 bit Number.
16	Implementation of
17	
18	
19	
20	

Sant Gadge Baba Amravati University, AmravatiSyllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester II

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
2BCALA B2	**LAB 2**	**4 periods per Batch**

Cos :

Upon successful completion of the course, students would be able to

1. Perform SQL commands

2. Perform PL/SQL program

3. Understand Database concept

***** List of Practical/Laboratory Experiments/Activities etc.

Sr.No.	**Name of Program/ Experiment**
1	Execute the Queries using SELECT commands.(Order By, Group By and Having Clause.)
2	Execute the DML commands in RDBMS.
3	Create a Base Table.
4	Perform like, Between, in operator on Base Table.
5	Perform logical and Relational operators on Base Table.
6	Perform Character functions on Base Table.
7	Perform Numeric functions on Base Table.
8	Perform Date functions on Base Table.
9	Perform Aggregate functions on Base Table.
10	Perform Conversion functions on Base Table.
11	To modify an existing database object. Alter the structure of the database.
12	Perform Views from Base Table and use it.
13	Create Tables (with Constraints).
14	Inserting/Updating/Deleting Records in a Table, Saving (Commit) and Undoing (rollback)
15	Write PL/SQL Code to create simple program
16	Write PL/SQL Code to illustrate control structures.
17	Write PL/SQL Code to create simple procedure/ function.
18	Write PL/SQL Code to illustrate exception handling
19	Write PL/SQL Code to illustrate cursor handling
20	Write PL/SQL Code to illustrate Trigger handling

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)Semester II

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/Practical/practicum/hands-on/Activity)	**(No. of Periods/Week)**
2BCALAB3	**LAB-3**	**4 Periods per Batch**

Cos :

Upon successful completion of the course, students would be able to

1. **Perform programs on OOPs**
2. Perform programs on functions, constructor and destructor.
3. **Understand and implement concept of Inheritance.**

* List of Practical/Laboratory Experiments/Activities etc.

Sr.No.	**Name of Program/ Experiment**
1	Write a program in C++ to demonstrate Class and Object.
2	Write a program in C++ to demonstrate constructor and destructor.
3	Write a program in C++ to demonstrate Inline function.
4	Write a program in C++ to demonstrate the use of friend function.
5	Write a program in C++ for default argument.
6	Write a program in C++ for unary operator overloading.
7	Write a program in C++ for Binary operator overloading.
8	Write a program in C++ for function overloading.
9	Write a program in C++ for virtual base class.
10	Write a program in C++ to implement single Inheritance.
11	Write a program in C++ to implement multiple Inheritance.
12	Write a program in C++ to implement multilevel Inheritance.
13	Write a program in C++ to implement hybrid Inheritance.
14	Write a program in C++ to implement hierarchical Inheritance.
15	Write a program in C++ for constructor overloading.
16	Write a program in C++ to implement parametrised constructor
17	Write a program in C++ to implement copy constructor
18	Write a program in C++ to implement abstract base classes
19	Write a program in C++ to implement ‘this’ pointer
20	Write a program in C++ for implement array of object

Sant Gadge Baba Amravati University, Amravati

Faculty: Science and Technology

Programme: Bachelor of Computer Application (BCA)

Syllabus Prescribed for 3 Year BCA UG Programme

Programme: Bachelor of Computer Application (BCA)

Semester:

Code of the Course/Subject	**Title of the Course/Subject**	**(Total Number of Periods)**
2BCAOEL3	**Fundamentals of C Programming**	**60 Periods**

COs:

Upon successful completion of the course, students would be able to

1 **use C Programming Language**
2 Understand different data types in C Language
3 apply the techniques to write program in C Language.
4 describe the use of control structures, loops in C Language.

Unit	**Content**
Unit I	**Fundamentals of C Language:** Important points about C, Why Use C, Applications of C, C Language and English Language, Features of C. **(8 periods)**
Unit II	**Overview of C Language:** History of C, First Program in C Hello World, Basic Structure of C Programming, Tokens in C, Keywords in C, Identifiers in C, Format Specifiers, Format Specifiers Examples **(12 periods)**
Unit III	**Data Types in C Language:** Introduction to Data Types in C,- int, float, double char **Variable in C Language:** Introduction, Declaration and Initialization, Variable types and Scope in C, Local Variable in C, static Variable in C, Global variables in C, Storage Class in C **(12 periods)**
Unit IV	**Constant in C Language:** Constants in C, Operators and Enums in C Language, Introduction to Operator, Arithmetic Operators, Relational Operators in C, Bit-wise Operators, Logical Operators, Assignment Operators, Conditional Operator, sizeof() Operator, Operator Precedence **(12 periods)**
Unit V	**Decision Making in C:** Introduction, if Statement, if-else Statement, Nested if Statement, if else if Ladder, switch case **Loop control in C Language:** Introduction, while loop, do while Loop, for Loop **Control Flow in C Programming**: break Statement, continue Statement, goto Statement **Array in C Language:** Introduction, Single Dimensional Array, Multi-Dimensional Array **(12 periods)**
COs: 1. Able to Write, compile and debug programs in C language. 2. Able to use different data types in a computer program. 3. Design programs involving decision structures, loops, and arrays.	
**Activities	1. Executing simple C Program 2. Using Data Types in C Program **3.** Using decision making statements in C program **(4 periods)**

Course Material/Learning Resources

Text books:

1. **The C Programming Language by Brian Kernighan and Dennis Ritchie 2nd edition**

Reference Books:

1. **Let Us C Yashavant kanetkar BPB.**
2. Absolute beginner's guide to C, Greg M. Perry, Edition 2, Publisher: Sams Pub.,1994.
3. **Computer Programming and Data Structures by E Balagurusamy, Tata McGraw Hill.**

Weblink to Equivalent MOOC on SWAYAM if relevant:

1. https://onlinecourses.nptel.ac.in/noc19_cs42/preview
2. https://onlinecourses.nptel.ac.in/noc22_cs40/preview
3. https://onlinecourses.swayam2.ac.in/cec20_cs02/preview

Weblink to Equivalent Virtual Lab if relevant:

1. https://www.vlab.co.in/broad-area-computer-science-and-engineering
2. https://cse02-iiith.vlabs.ac.in/
3. http://vlabs.iitb.ac.in/vlabs-dev/labs/oops/labs/exp1/index.php

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=irqbmMNs2Bo
2. https://www.youtube.com/watch?v=8PopR3x-VMY

Sant Gadge Baba Amravati University, Amravati

Faculty: Science and Technology

Programme: Bachelor of Computer Application (BCA)

Syllabus Prescribed for 3 Year BCA UG Programme

Semester:

Code of the Course/Subject	**Title of the Course/Subject**	**(Total Number of Periods)**
2BCAOEL4	**e-Commerce**	**60 Periods**

COs:

Upon successful completion of the course, students would be able to

1. understand information systems for business and management.
2. Understand organizational and managerial foundations of systems, the technical foundation for understanding information systems

Unit	**Content**
Unit I	**Introduction:** What is E-Commerce, Forces behind E-Commerce Industry Framework, Brief history of E-Commerce, Inter Organizational E-Commerce Intra Organizational E-Commerce, and Consumer, to Business Electronic Commerce, Architectural framework **(12 periods)**
Unit II	**Network Infrastructure for E-Commerce:** Introduction, Market forces behind I Way, Component of I way, Access Equipment, Global Information Distribution Network, Broad band Telecommunication. **(11 periods)**

Unit III	**Mobile Commerce:** Introduction to Mobile Commerce, Mobile Computing Application, Wireless Application, Protocols, WAP Technology, Mobile Information Devices, Web Security, Introduction to Web security, Firewalls & Transaction Security, Client Server Network, Emerging Client Server Security Threats, firewalls & Network Security. **(11 periods)**
Unit IV	**Electronic Payments:** Overview of Electronics payments, Digital Token based Electronics payment System, Smart, Cards, Credit Card I Debit Card based EPS, Emerging financial Instruments, Home Banking, Online Banking **(11 periods)**
Unit V	**Net Commerce:** EDA, EDI Application in Business, Legal requirement in E - Commerce, Introduction to supply Chain Management, CRM, issues in Customer Relationship Management. **(11 periods)**
COs: 1. Identify and apply relevant problem solving methodologies 2. Design components, systems and/or processes to meet required specifications for a web presence 3. Demonstrate research skills 4. Understand the basic concepts and technologies used in the field of management information systems.	
**Activities	1. Visit to various e-commerce sites. 2. Place an order on e-Commerce site. **3.** Using Payment Gateway **(4 periods)**

Course Material/Learning Resources

Text books:

1. Operating System Concepts: Silberschatz, Galvin and Gagne.

Reference Books:

1. Ravi Kalakota, Andrew Whinston, “Frontiers of Electronic Commerce”, Addision Wesley
2. Denieal Amor, “ The E-Business Revolution”, Addision Wesley
3. Diwan, Sharma, “E-Commerce” Excel
4. Bajaj & Nag, “E-Commerce: The Cutting Edge of Business”, TMH

Weblink to Equivalent MOOC on SWAYAM if relevant:

1. https://onlinecourses.swayam2.ac.in/nou21_cm14/preview
2. https://onlinecourses.swayam2.ac.in/cec19_cm01/preview
3. https://www.classcentral.com/course/swayam-e-commerce-technologies-14019

Weblink to Equivalent Virtual Lab if relevant:

1. https://www.vlab.co.in/
2. https://dl.acm.org/doi/abs/10.1145/1734263.1734295
3. https://www.researchgate.net/publication/221538163_Electronic_commerce_virtual_laborat ory

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

1. https://www.youtube.com/watch?v=OnqFpeAqr3M&list=PLbWX42QoZL5vhNjqqfyzLgbv Uezv72ocC
2. https://www.youtube.com/watch?v=taN56LK9APw
3. https://www.youtube.com/watch?v=Zzs6kLlkAUQ

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-I)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Per week				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical Int.	Practical Ext.	Total Marks	Marks	Grade
1	Communication Skill	1BCAE1	3		-	3	3	-	3	2	40		1	-	-	50	20	P
2	Communication Skill in English (AEC)	1BCAE2		1	-	1		1	1	--		10	1	25	-	25	10	P
3	DSC-1 (T) Fundamentals of Computers	1BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC-2(T)Structured Programming Paradigms	1BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC-3(T)Data Structure	1BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4(T)Fundamentals of Electronics in Computer	1BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC-1(P) Computer Hardware Software Troubleshooting	1BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC-2(P)Data Structure	1BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC-3 (P)Fundamentals of Computer Electronics	1BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	DSC- 1 (P)Generic Open Elective I(GOEC) 1-Computer Fundamentals 2-IT and BDP	1BCAG	2	-	-	2	2	-	2	2	College Level Exam.					50	20	p.
11	**Induction Programme***	BCAIP				30 hrs (beginning of 1 Semester classes)		1*	1									P
	Total		**25**	**1**	**12**	**38**	**25**	**7**	**33**				**6**			**675**		

	BCA-Sem-1 Total Credit	**39**	**Total Marks**	**675**	

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-II)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
1	Communication Skill	2BCAE1	3		-	3	3	-	3	2	40		1	-	-	50	20	P
2	Communication Skill in English (AEC)	2BCAE2		1	-	1		1	1	--		10	1	25	-	25	10	P
3	DSC- 1(T) Computer System and Interface	2BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Data Base Managemant System	2BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Object Oriented Programming	2BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T) Fundaentals of Computational Mathematics	2BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Computer Interfacing	2BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) DBMS	2BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) CPP	2BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Generic Open Elective I(GOEC) 1-Fund. Of C Programming 2-e-Commerce	2BCAG	2	-	-	2	2	-	2	2	College Level Exam.					50	20	p.
	Total		**25**	**1**	**12**	**38**	**25**	**7**	**32**				**6**			**675**		
	BCA-Sem-2 Total Credit		**38**	**Total Marks**				**675**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-III)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration ofExams in Hrs.	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
3	DSC- 1 (T) Operating System	3BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Core Java Programming	3BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Fundamentals of Open Source Software	3BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T)Python Programming	3BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Operating System	3BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) Java Programming	3BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) Python Programming	3BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Environmental Studies (AEC)	3BCAENV	2	-	-	2	2	-	2	2								
	Total		**22**	**0**	**12**	**34**	**22**	**6**	**28**				**4**			**550**		
	BCA-Sem-3 Total Credit		**32**	**Total Marks**				**550**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-IV)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
3	DSC- 1 (T) Data Communication Network	4BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Web Technologies	4BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Adv Java Programming	4BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T) Fundamentals of Data Science	4BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Web Technologies	4BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) Adv Java Programming	4BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) Data Science using Python	4BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Environmental Studies (AEC)	4BCAENV	2	-	-	2	1	-	1	3	70	30	1	-	-	100	40	P
	Total		**22**	**0**	**12**	**34**	**21**	**6**	**27**				**5**			**650**		
	BCA-Sem-4 Total Credit		**32**	**Total Marks**				**650**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-V)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Examsin Hrs	Examination & Evaluation Scheme							
			Teaching Period Perweek				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM)Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
3	DSC- 1 (T) Computer Graphics	5BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) Android Application Development	5BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Dot Net Technologies with C#	5BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T) Software Engineering	5BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) Graphic Programming	5BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) Android Programming	5BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) C# Programming	5BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	*Open Elective (OE1) Elective 1-Blockcain Technology 2-Cyber Security 3-Power BI	5BCAOE	5	-	-	5	5	-	5	3	100	-	-	-	-	100	40	P
	Total		**25**	**0**	**12**	**37**	**25**	**6**	**31**				**4**			**650**		
	BCA-Sem-5 Total Credit		**35**	**Total Marks**				**650**										

L: Lecture, T: Tutorial, P: Practical

Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.

- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report

Examinations leading to the Degree of Bachelor of Science
(Three Years Six Semesters Degree Programme) (Choice Based Credit System)
Scheme of Teaching, Learning, Examination and Evaluation **APPENDIX - A I (B.C.A. Part-I) (Semester-VI)**

Sr. No	Subject	Subject Code	Teaching & Learning Scheme							Duration of Exams in Hrs	Examination & Evaluation Scheme							
			Teaching Period Per week				Credits				Maximum Marks						Minimum Passing	
			L	T	P	Total Marks	Theory / Tutorial	Practical	Total		Theory + M.C.Q Ext.	Skill Enhancement Module (SEM) Int.	SEM Credit	Practical		Total Marks	Marks	Grade
														Int.	Ext.			
3	DSC- 1 (T) R-Programming	6BCA1	5		--	5	5	-	5	3	80	20	1	-	-	100	40	P
4	DSC- 2 (T) PHP Programming	6BCA2	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
5	DSC- 3 (T) Fundamentals of Cloud Computing	6BCA3	5		-	5	5	-	5	3	80	20	1	-	-	100	40	P
6	DSC-4 (T) Network Security	6BCA4	5		---	5	5	-	5	3	80	20	1	-	-	100	40	P
7	DSC- 1 (P) R Programming	6BCALAB1	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
8	DSC- 2 (P) PHP Programming	6BCALAB2	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
9	DSC- 3 (P) Based on Cloud Computing	6BCALAB3	-	-	4	4	-	2	2	4	-	-		-	50	50	25	P
10	Internship / Project	6BCAIP	-	-	2	2	-	2	2	4	-	-	-	25	25	50	25	P
	Total		**20**	**0**	**14**	**34**	**20**	**8**	**28**				**4**			**600**		
	BCA-Sem-6 Total Credit		**32**	**Total Marks**				**600**										

L: Lecture, T: Tutorial, P: Practical
Note : Internship /Field Work / Work Experience will be conducted after I semester till Vth semester in vacations for minimum 150 hrs. It's credits and grades will be reflected in final semester IV credit grade report.
- OEC (Optional) can be studied during semester I to VI, Its credits and grades will be reflected in final semester VI credit grade report