BACHELOR OF COMPUTER APPLICATION (BCA)

PURBANHAL UNIVERSITY
(FACULTY OF SOENCE AND TECHNOLOGY)
BIRATNAGAR, NEPAL

REGULATIONS GOVERNING BCA PROGRAM

1. TITLE OF PROGRAM:
   The programme shall be called BACHELOR OF COMPUTER APPLICATION (BCA).

2. ELIGIBILITY FOR ADMISSION:
   Students seeking admission in BCA program:

   2.1 Should have successfully completed twelve years of schooling in any stream.

   2.2 Should have achieved minimum D+ grade in each subject of grade 11 and 12 with CGPA 2.0 or more

   or

   Should have secured a minimum score of second division (45%) marks in 10+2, PCL or equivalent in any discipline.

   Students who have passed grade 11 and are waiting for supplementary exam (PURAK PARIKSHA) of grade 12 can also apply. However, they have to submit all the required documents at the time of admission.

   Students who appeared in the final exam and are waiting for the result and certificates can also apply for the entrance examination. However, they have to submit all the required documents at the time of admission.

   2.3 In case of foreign certificate, student should submit equivalence certificate and each subject grading with CGPA or total percentage document from concerned authority.

   2.4 Should pass entrance examination as conducted by Purbanchal University.

3. DURATION OF THE PROGRAM:
   The program of study shall extend over a period of eight semesters (FOUR ACADEMIC YEARS).

4. MEDIUM:
   ENGLISH shall be the medium of instruction and examination in all the subjects of BCA Program.

5. ATTENDANCE REQUIREMENT:
   A student must achieve, at least 80% attendance of lectures, tests, and tutorial classes in order to qualify for sitting for the final examination of any subject.

   There are no unauthorized cuts from classes; persistent poor attendance may result in exclusion from classes.

In the case of unavoidable absence such as for illness of the student or serious illness or death of a member of the family or similar compelling reasons for absence, all works missed must be satisfactorily made up and the responsibility for making up this work rests with the concerned students.

Teachers should also help them in making up this work.

6. EVALUATION PROCEDURES:

(a) CONTINUOUS ASSESSMENT

All courses undertaken by students are evaluated during semester using an internal system of continuous assessment.

The student is evaluated on class and/or tutorial participation, assignment work, laboratory work, class tests and quizzes that contribute to the final grade awarded for the subject.

Students will be notified at the commencement of each course about the evaluation methods to be used for the course and the weightage given to the different assignments and evaluation activities.

(b) COMBINED THEORYAND LABORATORY/PRACTICAL COURSES:

Some of the courses have combined theory and laboratory/practical portions. For these courses marks will be awarded as follows: 20% Internal Marks, 20% Practical Marks, 60% Final Examination Marks.

The type of each course is indicated in the following course descriptions.

(c) THEORY:

The pure theory course marks will be awarded as follows:
20% Internal Marks and 80% Final Examination Marks.

(d) LABORATORY:

The pure laboratory or practical course marks will be awarded as follows:
60% from continuous internal evaluation, 40% from final viva to be evaluated by the University.

(e) END-SEMESTER EXAMINATION:

The examination at the end of the semester is set and evaluated by examiners.

7. OBJECTIVE OF SEMESTER COMPUTER PROJECTS:

The concepts of project work will begin in the first semester and it will continue in the last Seven semesters. Students will be expected to apply the theory and principles they have learned from other courses in a practical way in order to complete a project each semester. They will develop skills in goal setting, planning, research, team work, implementation, assessment, report writing and presentation is they work on their chosen project.

Student will work in a group of upto three students under the guidance of group adviser. The group will decide on a project and set out their aims and objectives.

Registrar

8. EVALUATIONS AND GRADING SYSTEM:

The performance of students is evaluated through a system of continuous testing spread over the entire period of study. At the end of each semester, students are awarded letter grades based on grades and marks obtained in various segments of the course evaluation.

In students rating eight grades A+,A,B+, B, C, D ,F and I are used.
Letter grades are used to show the academic standing of a student, with the following values, equivalent marks % and remarks:

EQUIVALENT MARKS %	LETTER GRADE	GRADE VALUE	REMARKS
90 and Above	A+	4.00	
80 and Below 90	A	3.75	
70 and Below 80	B+	3.50	
60 and Below 70	B	3.00	
50 and Below 60	C	2.50	
40 and Below 50	D	1.75	
Below 40	F	0.00	Fail
Not Qualified(NQ)/Absent	I	-	Incomplete

If a student fails to submit term paper, report, home assignment and laboratory assignment, which are requirements of a course, the teacher concerned may allow him the benefit of an "Incomplete." A student who is awarded as "Incomplete" in any course can get it removed within six weeks from the end of the semester. If the requirements are not met within this time limit, the student's grade in that course is converted into "Fail." On completion of the course, however, the student does not receive any further grade but is allowed the benefit of the numerical grade point weight of an "Incomplete."

9. **CUMULATIVE GRADE POINT AVERAGE (CGPA)**

A Cumulative Grade Point Average (CGPA) , Which is the grade point average of all the semesters, is computed at the end of the course for all students. Final later grades in each course are converted into grade points on the following basis:

A+---------- 4.00 grade points
A----------3.75 grade points
B+----------3.50 grade points
B----------3.00 grade points
C----------2.50 grade points
D----------1.75 grade points
F----------0.00 grade points

As the student complete different course, these points are accumulated and an average point score for each student called the CGPA in maintained.

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The CGPA shall be calculated using the for formula:

$$CGPA = \frac{\Sigma(\text{Credit hours} \times \text{Grade points})}{\Sigma(\text{Credit hours})}$$

A student must maintain a CGPA of 2.0 or above throughout the study period. The student failing to maintain the CGPA of 2.0 may be required to withdraw from the program.

10. SCOPE FOR FURTHER STUDIES:

After accomplishing this course, the student can enroll for graduate degree such as:

Master of Computer Application
Maser of Information Technology
Master of Science in Computer Science
Master of Science in Computer Information Systems
Master of Business Administration

11. THE DISTRIBUTION OF COURSE SHALL BE AS FOLLOWS:

Year:I **Semester:I**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA101CO	Computer System Concepts	3	3	1	2	6
BCA102HS	Mathematics-I	3	3	1	-	4
BCA103HS	Technical English	3	3	1	-	4
BCA104CO	Computer programming in C	3	3	1	2	6
BCA105CO	Digital Logic	3	3	1	2	6
BCA106CO	Computer Project-I	2			3	3
	Total	17	15	6	9	30

Year:I **Semester:II**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA151HS	Mathematics-II	3	3	2	-	5
BCA152MS	Modern Business Practices	3	3	1		4
BCA153CO	Microprocessor and Assembly Language	3	3	1	2	6
BCA154CO	Object –Oriented Programming	3	3	1	2	6
BCA155HS	Sociology, Ethics and Emotional Intelligence	3	3	1	-	4
BCA156CO	Computer Project-II	2	-	-	3	3
	Total	17	15	6	7	28

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Year:II **Semester:I**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA201MS	Financial Accounting	3	3	1	1	5
BCA202CO	Computer Architecture	3	3	1		4
BCA203CO	Data Structure and Algorithm	3	3	1	2	6
BCA204CO	System Analysis and Design	3	3	1	-	4
BCA205CO	User Interface Design	3	3	1	2	6
BCA206CO	Computer Project-III	2	-	-	3	3
	Total	17	15	5	8	26

Year:II **Semester:II**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA251MS	Technology and Operations Management	3	3	1	-	4
BCA252CO	Numerical Methods	3	3	1	2	6
BCA253CO	Operating System	3	3	1	2	6
BCA254CO	Computer Network	3	3	1	2	6
BCA255CO	Database Management System	3	3	1	2	6
BCA256CO	Computer Project-IV	2	-	-	3	3
	Total	17	15	5	11	31

Year:III **Semester:I**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA301HS	Probability and Statistics	3	3	1	1	5
BCA302CO	Management Information System	3	3	1	-	4
BCA303CO	Object Oriented Analysis and Design	3	3	1	-	4
BCA304CO	Web Technology	3	3	1	2	6
BCA305CO	Computer Graphics	3	3	1	2	6
BCA306CO	Computer Project-V	2	-	-	3	3
	Total	17	15	5	8	28

Year:III **Semester:II**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA351HS	Research Methodology	3	3	1	-	4
BCA352CO	Software Engineering	3	3	1		4
BCA353CO	Cyber Security	3	3	1	2	6
BCA354CO	Advance Object Oriented Programming	3	3	1	2	6
BCA355CO	Artificial Intelligence	3	3	1	2	6
BCA356CO	Computer Project-VI	2	-	-	3	3
	Total	17	15	5	7	27

Year:IV **Semester:I**

Course Code	Course Title	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA401CO	IT in Banking	3	3	1	2	6
BCA4**	Specialization-1	3				
BCA4**	Specialization-2	3				
BCA4**	Specialization-3	3				
BCA402CO	Internship	3				
	Total	15				

Year:IV **Semester:II**

Course Code	Course Description	Credits	Lecture (Hrs.)	Tutorial (Hrs.)	Laboratory (Hrs.)	Total (Hrs.)
BCA451CO	Machine Learning with Python	3	3	1	2	6
BCA4**	Specialization-4	3				
BCA4**	Specialization-5	3				
BCA4**	Specialization-6	3				
BCA452CO	Apprentice Project	6				6
	Total	18				

****Specialization Area:**

Specialization area courses have been designed in three major areas for in-depth knowledge in the area. Students develop specialized expertise in their specialization area. Students are required to take six specialization courses, three courses each in seventh and eighth semester, from a selected area. Currently, three specialization areas (Information System Management, Networking and Cloud Computing, and Digital Commerce and Business Analytics) are offered to the students.

A. Information System Management

Year :IV and Semester :I (Specialization 1, Specialization 2 and Specialization 3)

BCA421CO: IT Entrepreneurship and Supply Chain Management
BCA422CO: Computer based Financial Management
BCA423CO: Data Warehousing and Mining

Year: IV and Semester: II(Specialization 4, Specialization 5, Specialization 6)

BCA471CO: Macro and Micro Economics
BCA472CO: Fundamentals of Marketing and Business Strategy
BCA473CO: Information Security

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B. **Networking and Cloud Computing**

Year :IV and Semester :I (Specialization 1, Specialization 2 and Specialization 3)

BCA228CO: Cloud Computing and Big Data

BCA229CO: Network System Administration

BCA230 CO: Remote Sensing and GIS

Year: IV and Semester: II(Specialization 4, Specialization 5, Specialization 6)

BCA478 CO: DotNet Programming
BCA479CO: Wireless Network and Mobile Computing
BCA489CO: Internet of Things

C: Digital Commerce and Business Analytics

Year :IV and Semester :I (Specialization 1, Specialization 2 and Specialization 3)

BCA435CO:Digital-Commerce
BCA436CO:Digital and Cloud-Governance
BCA437CO:Multimedia and Application

Year :IV and Semester :II (Specialization 4, Specialization 5 and Specialization 6)

BCA485 CO: Big Data

BCA486 CO: Database Programming

BCA487 CO: Bussiness Analytics

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