Annexure - I

PROGRAMME PROJECT REPORT

Bachelor of Computer Application

SCHOOL OF COMPUTER AND INFORMATION SCIENCES
U. P. Rajarshi Tandon Open University
Prayagraj

1. Programme Mission & Objectives

In line with the mission of the University to provide flexible learning opportunities to all, particularly to those who could not join regular colleges or universities owing to social, economic and other constraints, the 3-year Undergraduate Programme in BCA aims at providing holistic and value based knowledge and guidance to promote scientific temper in everyday life. The program offers a platform to the learners to fulfill the eligible criteria in various scientific jobs in government and private sector.

The programme aims at the following objectives:

1. Produce knowledgeable and skilled human resources which are employable in IT and ITES.
2. Impart knowledge required for planning, designing and building complex Application Software Systems as well as provide support to automated systems or application.
3. Produce entrepreneurs who can develop customized solutions for small to large Enterprises.
4. To develop academically competent and professionally motivated personnel, equipped with objective, critical thinking, right moral and ethical values that compassionately foster the scientific temper with a sense of social responsibility.
5. To develop students to become globally competent.
6. To inculcate Entrepreneurial skills among students

2. Relevance of the Programme with Mission and Goals

The 3-year Undergraduate Programme in BCA is designed with the objective of equipping learners to cope with the emerging trends and challenges in the scientific domain. In congruence with goals of the University the Programme also focuses to provide skilled manpower to the society to meet global demands. The Programme is designed with core and elective subjects so that a successful learner can go for higher studies. The Programme also aims at making the learners fit for taking up various jobs.

3. Nature of Prospective Target Group of Learners

The Program is targeted to all individuals looking to earn a graduation degree for employment, further higher education, promotion in career and professional development.

4. Appropriateness of Programme to be conducted in ODL mode to acquire specific skills & competence

Learning outcomes		
Learning Outcomes	**Elements of the descriptor**	**Bachelor of Computer Application**
LO 1	Knowledge and understanding	The graduates should be able to demonstrate the acquisition of comprehensive, factual, theoretical, and specialized knowledge in broad multidisciplinary contexts with depth in the underlying principles and theories relating to one or more fields of learning.
LO 2	Skills required to perform and accomplish tasks	The graduates should be able to demonstrate the acquisition of cognitive and technical skills required for performing and accomplishing complex tasks relating to the chosen fields of learning.
LO 3	Application of knowledge and skills	The graduates should be able to demonstrate the ability to apply the acquired specialized technical or theoretical knowledge, and cognitive and practical skills to gather and analyse quantitative/ qualitative data to assess the appropriateness of different approaches

		to solving problems.
LO 4	Generic learning outcomes	The graduates should be able to demonstrate the ability to communicate in writing and orally the constructs and methodologies adopted for the studies undertaken relating to the chosen fields of learning, make coherent arguments to support the findings/results of the study undertaken to specialist and non-specialist audience.
LO 5	Constitutional, humanistic, ethical and moral values	The graduates should be able to demonstrate the willingness and ability to embrace the constitutional, humanistic, ethical, and moral values, and practice these values in life.
LO 6	Employment ready skills, and entrepreneurship skills and mindset	The graduates should be able to demonstrate the acquisition of knowledge and essential skills set and competence that are necessary to: take up a professional job and professional practice.

5. Instructional Design

The University follows the credit system in all its programmes. One credit is equal to 30 hours of learner's study time which is equivalent to 15 lectures in conventional system. To earn a bachelor's degree, a learner must earn 120 credits in a minimum of six semesters (three years) with 20 credits per semester. For earning 120 credits, a learner must go through the following Programme Structure:

Programme Structure of BCA

Level	Year	Sem	Core Course 1	Core Course 2	Core Course 3	Core Course 4	Ability Enhancement Compulsory Course (AECC)	Discipline Specific Elective Course (DEC)	Practical Lab/ Project with viva voce	Total credit
5	1	1st	4	4	4	4	2		2	20
		2nd	4	4	4	4	2		2	20
6	2	3rd	4	4	4	4	2		2	20
		4th	4	4	4	4	2		2	20
7	3	5th	4	4	4	--	--	4	4	20
		6th	4	4	--	--	--	4	8	20
			Total credit							120

Explanation of terms used for categorization of courses:

A. **Course 1 to 4:** A course, which should compulsorily be studied by a learner as a core requirement is termed as a Core course.

B. **Ability Enhancement Compulsory Courses (AECC):** "AECC" courses are the courses based upon the content that leads to knowledge enhancement.

Semester	Ability Enhancement Courses (AECC)
1	Ability Enhancement Course in English [AECEG] OR Ability Enhancement Course in Hindi [AECHD]
2	Ability Enhancement Course in Human Rights and Duties [AECHRD] OR Ability Enhancement Course in Health & Hygiene [AECHH]
3	Ability Enhancement Course in Environment Awareness [AECEA] OR Ability Enhancement Course in Solid Waste Management [AESWM]
4	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]

C. **Practical Lab:** Lab based on theory courses for implementing the algorithms discussed in theory papers.

D. The learner has to choose any one course from **Discipline Specific Elective Course** in fifth and sixth semester

E. Project with Viva Voce.

5.1 Course curriculum: The detail of syllabus is given in Appendix-I

5.2 Language of Instruction: English. However, learner can write assignment and give Term End Examination (TEE) either in Hindi or English.

5.3 Duration of the Programme

Minimum duration in years: 03 Maximum duration in years: 06

5.4 Faculty & Support Staff

Professor (1), Assistant Professor (3) and support staff (3)

6. Procedure for admissions, curriculum transaction and evaluation

i. Admission Procedure

(a) The detailed information regarding admission will be given on the UPRTOU website and on the admission portal. Learners seeking admission shall apply online.

(b) Direct admission to 3-year Bachelor of Computer Application program is offered to the interested candidates.

(c) Eligibility:

10+2

OR

3-years diploma from Board of Technical Education / equivalent

OR

Two year ITI programme of any trade after 10 standard.

ii. **Programme Fee:** Rs. 13000/- year. The fee is deposited through online admission portal only.

iii. Evaluation

The evaluation consists of two components: (1) continuous evaluation through assignments, and (2) term-end examination. Learner must pass both in continuous evaluation as well as in the term-end examination of a course to earn the credits assigned to that course. For each course there shall be one written Terminal Examination. The evaluation of every course shall be in two parts that is 30% internal weightage through assignments and 70% external weightage through terminal exams.

(a) Theory course

	Max. Marks
Terminal Examination	70
Assignment	30
Total	**100**

(b) Practical course:

	Max. Marks
Terminal Practical Examination	100

Marks of Terminal Practical Examination shall be awarded as per following scheme:

i.	Write up /theory work	30
ii.	Viva-voce	30
iii.	Execution/Performance/Demonstration	20
iv.	Lab Record	20

The following 10-Point Grading System for evaluating learners' achievement is used for CBCS programmes:

10-Point Grading System in the light of UGC-CBCS Guidelines

8. Cost estimate of the programme and the provisions

3-year Bachelor of Computer Application programme consists of 25 theory courses and 05 laboratory and 01 research project. Each course is of 4 credits which consists of approx. 10 units. The total approximated expenditure on the development of 25 courses is:

S. No.	Item	Cost per Unit (writing & editing)	Total cost (Rs.)
1	Total no. of units in 25 courses = 250	4500	11,25,000
2	BOS Meetings etc.	100000	100000
		Total	12,25,000

9. Quality assurance mechanism and expected programme outcomes

(a) **Quality assurance mechanism:** The program structure is developed under the guidance of the Board of studies comprising external expert members of the concerned subjects followed by the School board. The program structure and syllabus is approved by the Academic Council of the University. The course structure and syllabus is reviewed time to time according to the feedback received from the stakeholders and societal needs.

The Centre for Internal Quality Assurance will monitor, improve and enhance effectiveness of the program through the following:

- ✓ Annual academic audit
- ✓ Feedback analysis for quality improvement
- ✓ Regular faculty development programs
- ✓ Standardization of learning resources
- ✓ Periodic revision of program depending upon the changing trends by communicating to the concerned school

(b) **Expected programme outcomes (POs)**

PO1	An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.
PO 2	An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
PO 3	An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
PO 4	An ability to function effectively on teams to accomplish a common goal
PO 5	An understanding of professional, ethical, legal, security and social issues and responsibilities
PO 6	An ability to analyze the local and global impact of computing on individuals, organizations, and society.
PO 7	Recognition of the need for and an ability to engage in continuing professional development.
PO 8	An ability to use current techniques, skills, and tools necessary for computing practice.

APPENDIX-I

Letter Grade	Grade Point	% Range
O (Outstanding)	10	91-100
A+ (Excellent)	9	81-90
A (Very Good)	8	71-80
B+ (Good)	7	61-70
B (Above Average)	6	51-60
C (Average)	5	41-50
P (Pass)	4	36-40
NC (Not Completed)	0	0-35
Ab (Absent)	0	
Q	Qualified	Applicable only for Non-Credit courses
NQ	Not Qualified	

Learner is required to score at least a 'P' grade (36% marks) in both the continuous evaluation (assignments) as well as the term-end examination. In the overall computation also, learner must get at least a 'P' grade in each course to be eligible for the B. Sc. degree.

Computation of CGPA and SGPA

(a) Following formula shall be used for calculation of CGPA and SGPA

For jth semester SGPA (Sj) = Σ (Ci *Gi)/ Σ Ci	where, Ci = number of credits of the ith course in jth semester Gi= grade point scored by the learner in the ith course in jth semester.
CGPA = Σ (Cj *Sj)/ Σ Cj	where, Sj = SGPA of the jth semester Cj = total number of credits in the jth semester

The CGPA and CGPA shall be rounded off up to the two decimal points. (For e.g., if a learner obtained 7.2345, then it will be written as 7.23 or if s(he) obtained 7.23675 then it be will written as 7.24)

CGPA will be converted into percentage according to the following formula:

Equivalent Percentage = CGPA * 9.5

(b) Award of Division

The learner will be awarded division according to the following table:

Division	Classification
1st Division	6.31 or more and less than 10 CGPA
2nd Division	4.73 or more and less than 6.31 CGPA
3rd Division	3.78 r more and less than 4.73 CGPA

7. Requirement of the laboratory support and Library Resources

The practical sessions are held in the science laboratories of the Study Centre. In these labs, the learner will have the facility to use the equipment andconsumables relevant to the syllabus. The SLM, supplementary text audio and video material of the various courses of the program is available through the online study portal of the University. The University also have a subscription of National Digital Library to provide the learners with the ability to enhance access to information and knowledge of various courses of the programme.

Academic Year: 2025-2026

Year wise Structure & Syllabi of Bachelor of Computer Application

Year	Semester	Course Code	Paper Title	Type of Course	Max. Marks	Credits
First	1	**Core Courses**				
		BCA-1.1	C Programming	Theory	100	4
		BCA-1.2	Data Structures	Theory	100	4
		BCA-1.3	Basic Mathematics	Theory	100	4
		BCA-1.4	Numerical Analysis	Theory	100	4
		BCA-1.5P	Practical Work	Practical	100	2
		Ability Enhancement Compulsory Courses				
		AECEG OR AECHD	Ability Enhancement Course in English [AECEG] OR Ability Enhancement Course in Hindi [AECHD]	Theory	100	4
	2	**Core Courses**				
		BCA-2.1	Design and Analysis of Algorithm	Theory	100	4
		BCA-2.2	Discrete Mathematics	Theory	100	4
		BCA-2.3	C++ and Object Oriented Programming	Theory	100	4
		BCA-2.4	Database Management System	Theory	100	4
		BCA-2.5P	Practical Work	Practical	100	2
		Ability Enhancement Compulsory Courses				
		AECHRD OR AECHH	Ability Enhancement Course in Human Rights and Duties [AECHRD] OR Ability Enhancement Course in Health &Hygiene[AECHH]	Theory	100	4
Second	3	**Core Courses**				
		BCA-3.1	Operating System	Theory	100	4
		BCA-3.2	Software Engineering	Theory	100	4
		BCA-3.3	Computer Network	Theory	100	4
		BCA-3.4	Java Programming	Theory	100	4
		BCA-3.5P	Practical Work	Practical	100	2
		Ability Enhancement Compulsory Courses				
		AECEA OR AECSWM	Ability Enhancement Course in Environment Awareness [AECEA] OR Ability Enhancement Course in Solid Waste Management [AESWM]	Theory	100	4
	4	**Core Courses**				
		BCA-4.1	Windows Programming	Theory	100	4
		BCA-4.2	Computer Organization	Theory	100	4
		BCA-4.3	Introduction to Mobile Architecture	Theory	100	4
		BCA-4.4	Introduction to Cyber Security	Theory	100	4
		BCA-4.5P	Practical Work	Practical	100	2
		Ability Enhancement Compulsory Courses				

		AECNC OR AECDM	Ability Enhancement Course in Nutrition for Community [AECNC] OR Ability Enhancement Course in Disaster Management [AECDM]	Theory	100	4
Third	5	**Core Courses**				
		BCA-5.1	Python Programming	Theory	100	4
		BCA-5.2	Multimedia	Theory	100	4
		BCA-5.3	Soft Computing	Theory	100	4
		BCA-5.4P	Practical Work	Practical	100	4
		Discipline Elective Course (select any one)				
		BCA-EA OR BCA-EB	Web Technology OR Client Server Technology	Theory	100	4
	6	**Core Courses**				
		BCA-6.1	Information and Network Security	Theory	100	4
		BCA-6.2	Computer Graphics	Theory	100	4
		BCA-6.3P	Project with Viva Voce	Project	100	8
		Discipline Elective Course (select any one)				
		BCA-EC OR BCA-ED	Computer Architecture OR Microprocessor and its applications	Theory	100	4
				Total Max. Marks/Credit	**3300**	**128**