PROGRAMME PROJECT REPORT

Bachelor of Computer Application

(3 Year Programme in accordance with NEP-2020)

Contents

1. Bachelor's Degree Programme

The National Education Policy (NEP) 2020 envisions a new vision that enable an individual to study one or more specialized areas of interest at a deep level, and also develop capabilities across a range of disciplines including sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects. In accordance with NEP 2020, the UGC has formulated a new student-centric "Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)" incorporating a flexible choice-based credit system, multidisciplinary approach, and multiple entry and exit options. This will facilitate students to pursue their career path by choosing the subject/field of their interest.

The design of Bachelor of Computer Application programme in line with NHEQF offers opportunities and avenues to learn core subjects but also to explore additional avenues of learning beyond the core subjects for holistic development of a learner.

The uniform grading system will also enable potential employers in assessing the performance of the learner. In order to bring uniformity in evaluation system and computation of the Cumulative Grade Point Average (CGPA) based on learner's performance in examinations, guidelines framed by the UGC are followed. Hence, adoption of NHEQF helps to overcome the gap between university degree and employability by introducing skills and competencies in the graduates.

2. BCA Programme

The structure and duration of undergraduate programme of Bachelor of Computer Application in accordance with NEP 2020 includes multiple exit options within this period, with appropriate certifications:

- Level 5: a **certificate** after completing 1 year (2 semesters) of study in the chosen discipline or field, including vocational and professional areas;
- Level 6: a **diploma** after 2 years (4 semesters) of study;
- Level 7: a **Bachelor's** degree after a 3-year (6 semesters) programme.

2.1 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

2.2 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 three major subjects so that a successful learner can go for higher studies in any one of the major subjects of his/ her choice. The Programme also aims at making the learners fit for taking up various jobs.

2.3 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.

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

Learning outcomes after Level 5		
Learning Outcomes	Elements of the descriptor	Level 5 (Undergraduate Certificate)
LO 1	Knowledge and understanding	The graduates should be able to demonstrate the acquisition of: • knowledge of facts, concepts, principles, theories, and processes in broad multidisciplinary learning contexts within the chosen fields of learning in a broad multidisciplinary learning, • understanding of the linkages between the learning areas within and across the chosen fields of study, • procedural knowledge required for performing skilled or paraprofessional tasks associated with the chosen fields of learning.
LO 2	Skills required to perform and accomplish tasks	The graduates should be able to demonstrate the acquisition of: • a range of cognitive and technical skills required for accomplishing assigned tasks relating to the chosen fields of learning in the context of broad multidisciplinary contexts. • cognitive skills required to identify, analyse and synthesize information from a range of sources. • cognitive and technical skills required for selecting and using relevant methods, tools, and materials to assess the appropriateness of approaches to solving problems associated with 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 operational or technical and theoretical knowledge, and a range of cognitive and practical skills to select and use basic methods, tools, materials, and information to generate solutions to specific problems relating to the chosen fields of learning
LO 4	Generic learning outcomes	The graduates should be able to demonstrate the ability to: • listen carefully, read texts related to the chosen fields of study analytically and present information in a clear and concise manner to different groups/audiences. • express thoughts and ideas effectively in writing and orally and present the results/findings of the experiments carried out in a clear and concise manner to different groups. • meet one's own learning needs relating to the chosen fields of learning. • pursue self-directed and self-managed learning to upgrade knowledge and skills required for higher level of education and training. • gather and interpret relevant quantitative and qualitative data to identify problems, • critically evaluate principles and theories associated with the chosen fields of learning. • make judgement and take decision, based on analysis of data and evidence, for formulating responses to issues/problems associated with the chosen fields of learning, requiring the exercise of some personal responsibility for action and outputs/outcomes.
LO 5	Constitutional, humanistic, ethical and moral values	The graduates should be able to demonstrate the willingness to: • practice constitutional, humanistic, ethical, and moral values in one's life, and practice these values in real-life situations, • put forward convincing arguments to respond to the ethical and moral issues associated with the chosen fields of learning.
LO 6	Employment ready skills, and entrepreneurship skills and mindset	The graduates should be able to demonstrate the acquisition of: • knowledge and a basket of essential skills, required to perform effectively in a defined job relating to the chosen fields of study, • ability to exercise responsibility for the completion of assigned tasks and for the outputs of own work, and to take some responsibility for group work and output as a member of the group.

Learning outcomes after Level 6		
Learning Outcomes	Elements of the descriptor	Level 6 (Undergraduate Diploma)
LO 1	Knowledge and understanding	The graduates should be able to demonstrate the acquisition of: • theoretical and technical knowledge in broad multidisciplinary contexts within the chosen fields of learning, • deeper knowledge and understanding of one of the learning areas and its underlying principles and theories,

		• procedural knowledge required for performing skilled or paraprofessional tasks associated with the chosen 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, • cognitive and technical skills required to analyse and synthesize ideas and information from a range of sources and act on information to generate solutions to specific problems associated with 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 or theoretical knowledge, and a range of cognitive and practical skills to gather quantitative and qualitative data, • select and apply basic methods, tools, materials, and information to formulate solutions to problems related to the chosen field(s) of learning.
LO 4	Generic learning outcomes	The graduates should be able to demonstrate the ability to: • listen carefully, read texts related to the chosen fields of learning analytically and present complex information in a clear and concise manner to different groups/audiences, • communicate in writing and orally the information, arguments, and results of the experiments and studies conducted accurately and effectively to specialist and non-specialist audience. • meet one's own learning needs relating to the chosen field(s) of learning, work/vocation, and an area of professional practice, • pursue self-paced and self-directed learning to upgrade knowledge and skills required for pursuing higher level of education and training. • critically evaluate the essential theories, policies, and practices by following scientific approach to knowledge development. • make judgement and take decision, based on the analysis and evaluation of information, for determining solutions to a variety of unpredictable problems associated with the chosen fields of learning, taking responsibility for the nature and quality of outputs.
LO 5	Constitutional, humanistic, ethical and moral values	The graduates should demonstrate the willingness and ability to: • embrace the constitutional, humanistic, ethical, and moral values, and practice these values in life, and take a position regarding these values, • formulate arguments in support of actions to address issues relating to the ethical and moral issues relating to the chosen fields of learning, including environmental and sustainable development issues, from multiple perspectives.
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 that are necessary to: • take up job/employment or professional practice requiring the exercise of full personal responsibility for the completion of tasks and for the outputs of own work.

		• exercise self- management within the guidelines of study and work contexts. • supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities.

Learning outcomes after Level 7		
Learning Outcomes	**Elements of the descriptor**	**Level 7 (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. • knowledge of the current and emerging issues and developments within the chosen field(s) of learning. • procedural knowledge required for performing and accomplishing professional tasks associated with the chosen 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. • cognitive and technical skills required to evaluate and analyse complex ideas, • cognitive and technical skills required to generate solutions to specific problems associated with 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, • employ the right approach to generate solutions to problems related to the chosen fields of learning.
LO 4	Generic learning outcomes	The graduates should be able to demonstrate the ability to: • listen carefully, to read text related to the chosen fields of learning analytically and present complex information in a clear and concise manner to different groups/audiences. • 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. • meet one's own learning needs relating to the chosen field(s) of learning, • pursue self-paced and self-directed learning to upgrade knowledge and skills that will help adapt to changing demands of workplace and pursue higher level of education and training. • critically evaluate evidence for taking actions to generate solutions to specific problems associated with the chosen fields of learning based on empirical evidence.

		• make judgement and take decisions based on the analysis and evaluation of information for formulating responses to problems, including real-life problems, • exercise judgement across a broad range of functions based on empirical evidence, for determining personal and/or group actions to generate solutions to specific problem s associated with the chosen fields of learning.	
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. • identify ethical issues in science, • formulate coherent arguments about ethical and moral issues, including environmental and sustainable development issues. • follow ethical practices in all aspects of research and development	
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, • entrepreneurship skills and mindset required for setting up and running an economic enterprise or pursuing self-employment • exercise management and supervision in the contexts of work or study activities involving unpredictable work processes and working environment	

2.5 Instructional Design

2.5.1   3-year BCA Programme Structure

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

Year	Semester	Course Code	Paper Title	Type of Course	Max. Marks	Credits
			Major			
		BCA-101N	Programming using C	3T+1P	100	4
			Minor			
			Digital Electronics	Theory	100	4
	1		**Skill Enhancement Courses**			
			The learner shall have the choice of courses from SEC course pool	3T+1P	100	3
			Generic Elective (GE) /Multidisciplinary			
			The learner shall have the choice of courses from GE course pool	Theory	100	3
			Value Added Course			

First			The learner shall have the choice of courses from VAC course pool	Theory	100	3
			Ability Enhancement Compulsory Courses			
			The learner shall have the choice of courses from AECC course pool	Theory	100	3
	2		**Major**			
		BCA-102N	Operating System	Theory	100	4
			Minor(Vocational)			
			Digital Marketing	Theory	100	4
			Skill Enhancement Courses (SEC)			
			The learner shall have the choice of courses from SEC course pool	2T+1P	100	3
			Value Added Course			
			The learner shall have the choice of courses from VAC course pool	Theory	100	3
			Generic Elective (GE) /Multidisciplinary			
			The learner shall have the choice of courses from GE course pool	Theory	100	3
			Ability Enhancement Compulsory Courses			
			The learner shall have the choice of courses from AECC course pool	Theory	100	3
Second	3		**Major**			
		BCA-201N	Database Management System	3T+1P	100	4
		BCA-202N	Data Structure & Program Methodology	3T+1P	100	4
			Minor			
			Programming with Python	3T+1P	100	4
			Skill Enhancement Courses (SEC)			
			The learner shall have the choice of courses from SEC course pool	Theory	100	3
			Generic Elective (GE) /Multidisciplinary			
				Theory	100	3
			Ability Enhancement Compulsory Courses			
			The learner shall have the choice of courses from AECC course pool	Theory	100	2
	4		**Major**			
		BCA-203N	Computer Network	Theory	100	4
		BCA-204N	Discreet Mathematics	Theory	100	4
			Major(Electives) (select any one)			
		BCA-EA BCA-EB	Computer Architecture/ Microprocessor and its applications	Theory	100	4
		BCA-EC BCA-ED	Cloud Computing/ Introduction to Mobile Computing	Theory	100	4
			Minor(Vocational)			
			Setting Up Wireless Networks	3T+1P	100	4

			Major			
		BCA-301N	Web Technology	3T+1P	100	4
		BCA-302N	Software Engineering	Theory	100	4
	5		**Minor**			
			Introduction to GIS and RS	Theory	100	4
		Major Elective Course (select any one)				
		BCA-EE OR BCA-EF	Java Programming or Programming in C Sharp using .Net Framework	Theory	100	4
			Seminar/Project/Internship/Community Reach/Apprenticeship			
		BCA-Project	Project with Viva Voce		100	4
Third			**Major**			
		BCA-303N	Design and Analysis of Algorithm	3T+1P	100	4
		BCA-304N	Introduction to Cyber Security	Theory	100	4
		Major Elective Course (select any one)				
	6	BCA-EG OR BCA-EH	Artificial Intelligence OR Formal Languages and Automata	3T+1P	100	4
		BCA-EI Or BCA-EJ	SQM Or Soft Computing/ Or R Programming & Big Data Analytics	Theory or 3T+1P	100	4
			Minor (Vocational)			
			Digital Forensics	Theory	100	4
			Total Max. Marks/Credit			**120**

Explanation of terms used for categorization of courses:
A. **Major discipline**: is the discipline or subject of main focus and the degree will be awarded in that discipline. Students should secure the prescribed number of credits (about 50% of total credits) through core courses in the major discipline.
B. **Minor discipline:** helps a student to gain a broader understanding beyond the major discipline. For example, if a student pursuing an Economics major obtains a minimum of 12 credits from a bunch of courses in Statistics, then the student will be awarded B.A. degree in Economics with a Minor in Statistics.
C. **Ability Enhancement Compulsory Courses (AECC):** Students are required to achieve competency in a Modern Indian Language (MIL) and in the English language with special emphasis

on language and communication skills. The courses aim at enabling the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic writing skills, that help students articulate their arguments and present their thinking clearly and coherently and recognize the importance of language as a mediator of knowledge and identity. They would also enable students to acquaint themselves with the cultural and intellectual heritage of the chosen MIL and English language, as well as to provide a reflective understanding of the structure and complexity of the language/literature related to both the MIL and English language. The courses will also emphasize the development and enhancement of skills such as communication, and the ability to participate/conduct discussion and debate.

D. **Skills Enhancement Courses (SEC):** These courses are aimed at imparting practical skills, hands-on training, soft skills, etc., to enhance the employability of students. The institution may design courses as per the students' needs and available institutional resources.

E. **Value-Added Courses (VAC) Common to All UG Students:**

    i. *Understanding India:* The course aims at enabling the students to acquire and demonstrate the knowledge and understanding of contemporary India with its historical perspective, the basic framework of the goals and policies of national development, and the constitutional obligations with special emphasis on constitutional values and fundamental rights and duties. The course would also focus on developing an understanding among student-teachers of the Indian knowledge systems, the Indian education system, and the roles and obligations of teachers to the nation in general and to the school/community/society. The course will attempt to deepen knowledge about and understanding of India's freedom struggle and of the values and ideals that it represented to develop an appreciation of the contributions made by people of all sections and regions of the country, and help learners understand and cherish the values enshrined in the Indian Constitution and to prepare them for their roles and responsibilities as effective citizens of a democratic society.

    ii. *Environmental science/education:* The course seeks to equip students with the ability to apply the acquired knowledge, skills, attitudes, and values required to take appropriate actions for mitigating the effects of environmental degradation, climate change, and pollution, effective waste management, conservation of biological diversity, management of biological resources, forest and wildlife conservation, and sustainable development and living. The course will also deepen the knowledge and understanding of India's environment in its totality, its interactive processes, and its effects on the future quality of people's lives.

    iii. *Digital and technological solutions:* Courses in cutting-edge areas that are fast gaining prominences, such as Artificial Intelligence (AI), 3-D machining, big data analysis, machine learning, drone technologies, and Deep learning with important applications to health, environment, and sustainable living that will be woven into undergraduate education for enhancing the employability of the youth.

    iv. *Health & Wellness, Yoga education, sports, and fitness:* Course components relating to health and wellness seek to promote an optimal state of physical, emotional, intellectual, social, spiritual, and environmental well-being of a person. Sports and fitness activities will be organized outside the regular institutional working hours. Yoga education would focus on preparing the students physically and mentally for the integration of their physical, mental, and spiritual faculties, and equipping them with basic knowledge about one's personality, maintaining self-discipline and self-control, to learn to handle oneself well in all life situations. The focus of sports and fitness components of the courses will be on the improvement of physical fitness including the improvement of various components of physical and skills-related fitness like strength, speed, coordination, endurance, and

flexibility; acquisition of sports skills including motor skills as well as basic movement skills relevant to a particular sport; improvement of tactical abilities; and improvement of mental abilities.

The HEIs may introduce other innovative value-added courses relevant to the discipline or common to all UG programmes.

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

G. **Industrial Training/ Survey/ Research Project/ Field Work/Apprenticeship/ Dissertation/Internship:** An elective course designed to acquire special/advanced knowledge, such as supplement study/support study to a project work, and a learner studies such a course on his own with an advisory support by a counsellor/faculty member.

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

2.5.3   Language of Instruction: English.

2.5.4   Duration of the Programme
Minimum duration in years: 03   Maximum duration in years: 06

2.5.5   Faculty & Support Staff
Professor (1), Associate Professor (2), Assistant Professor(AC)(1) and support staff (2)

2.6 Instructional Delivery Mechanisms
The Open University system is more learner-oriented, and the student is an active participant in the teaching-learning process. Most of the instructions are imparted through distance rather than face-to-face communication.

The University follows a multi-media approach for instruction. It comprises of:
- self-instructional printed material (Self Learning Material)
- audio and video lectures
- face-to-face counselling
- assignments
- laboratory work through Virtual Lab
- Project work in some courses
- teleconference/web conference
- Moodle based Learning Management System
- SWAYAM
- SWAYAMPRABHA(d2h Channel).

2.6.1   Self-Learning Material
The Self Learning Material (SLMs) are prepared in line with the UGC guidelines on preparation of SLMs. The prepared study materials are self-instructional in nature. The course material is divided into blocks. Each block contains a few units. Lessons, which are called Units, are structured to facilitate self-study. The units of a block have similar nature of contents. The first page of each block indicates the numbers and titles of the units comprising the block. In the first block of each course, we start with course introduction. This is followed by a brief introduction to the block. After the block introduction, emphasis is given on contribution of

ancient Indian knowledge into that specific course. Next, each unit begins with an introduction to talk about the contents of the unit. The list of objectives are outlined to expect the learning based outcome after working through the unit. This is followed by the main body of the unit, which is divided into various sections and sub-sections. Each unit is summarized with the main highlights of the contents.

Each unit have several "Check Your Progress" Questions and Terminal Questions /exercises. These questions help the learner to assess his/her understanding of the subject contents. At the end of units, additional references/books/suggested online weblink for MOOCs/Open Educational Resources for additional reading are suggested.

2.6.2   Audio and Video lectures
Apart from SLM, audio and video lectures have been prepared for some courses. The audio-video material is supplementary to print material. The video lectures are available at YouTube channel of university UOULIVE.

2.6.3   Counselling Classes
The face to face (F2F) counselling classes are conducted at head quarter and study centers. The purpose of such a contact class is to answer some of questions and clarify the doubts of learner which may not be possible through any other means of communication. Well experienced counsellors at study centers provide counselling and guidance to the learner in the courses that (s)he has chosen for study. The counselling sessions for each of the courses will be held at suitable intervals throughout the whole academic session. The time table for counselling classes are displayed at head quarter as well as by the coordinator of study center, however, attending counselling sessions is not compulsory. It is noted that to attend the counselling sessions, learner has to go through the course materials and note down the points to be discussed as it is not a regular class or lectures.

2.6.4   Assignments
The purpose of assignments is to test the comprehension of the learning material that learner receives and also help to get through the courses by providing self-feedback to the learner. The course content given in the SLM will be sufficient for answering the assignments.

Assignments constitute the continuous evaluation component of a course. The online assignments are available at the specifically designed assignment portal of the University(*assignment*.**uou.ac.in**) and the link is also provided in the home page of university website. In any case, learner has to submit assignment before appearing in the examination for any course. The assignments of a course carry 30% weightage while 70% weightage is given to the term-end examination (TEE). The marks obtained by learner in the assignments will be counted in the final result.

2.6.5   Laboratory Work
Laboratory courses are an integral component of the Bachelor of Computer Application programme. Importance has been given to the utility of an experiment with respect to real life experience, development of experimental skills, and industrial applications. All the laboratory work is implemented through virtual lab(***www.vlab.co.in***) so that in-service persons and learners located at the far-off places can take them without difficulty. A student has to work for around 30 hours/ credit. Around 80% time would be spent on experimental work and the

remaining time will be used for doing calculations, preparations of records, viewing or listening to the video/audio programmes.

2.6.6 Teleconference/Web conference

Teleconference/web conference, using done through ZOOM/Google meeting/ any other suitable platform in form of online regular/special counselling sessions is another medium to impart instruction to and facilitate learning for a distance learner. The students concerned would be informed about the teleconferencing schedule and the place where it is to be conducted by emails/sending bulk SMS/notification through University website/whatsapp or telegram groups/departmental blogs/Notification to Learner Support Centers/Notice Boards/ etc.

2.6.7 Web Enabled Academic Support Portal

The University also provide Web Enabled Academic Support Portal to access the course materials, assignments, and other learning resources. The soft copy of the SLM is available in the University Website (www.uou.ac.in). The University also have a Moodle based Learning Management System where supplementary material is available in the form of MOOCs(elearning.uou.ac.in). Some of the courses are also available at the national MOOC platform SWAYAM and d2h channel SWAYAMPRABHA. Asynchronous support is extended to the learners via *discussion forum* and synchronous support is provided via chat and live sessions which are conducted using ZOOM/ Google Meet/etc.

2.6.8 Learner Support Service Systems

(a) Learner Support Centre

A Learner Support Centre has following major functions:

(i)   **Counselling:** Counselling is an important aspect of Open University System. Face to face contact-cum-counselling classes for the courses will be provided at the Learner Support Centre. The detailed programme of the contact-cum-counselling sessions will be sent to the learner by the Coordinator of the Study Centre. In these sessions learner will get an opportunity to discuss with the Counsellors his/her problems pertaining to the courses of study.

(ii) **Evaluation of Assignments:** The online assignments are auto graded. Feedback is provided to these learners after the submission of the assignments which will help the learner in his/her studies.

(iii) **Library:** Every Study Centre will have a library having relevant course materials, reference books suggested for supplementary reading prepared for the course(s).

(iv) **Information and Advice:** The learner will be given relevant information about the courses offered by the University. Facilities are also provided to give him/her guidance in choosing courses.

(v)   **Interaction with fellow-students:** In the Study Centre learner will have an opportunity to interact with fellow students. This may lead to the formation of self-help groups.

(b) Learner Support Services (LSS)

The University has formed an LSS cell at the head quarter. The LSS cell coordinate with the Study Centre to get rid of any problem faced by the learner. University also have developed online ticketing system where the learner can generate the ticket, which is resolved by the concerned authority in the stipulated time.

2.7 Procedure for admissions, curriculum transaction and evaluation

2.7.1 Admission Procedure

(a) The detailed information regarding admission will be given on the UOU 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 (Candidates not having Mathematics at 10+2 level will have to pass one qualifying Mathematics paper during course of the programme(the learner will choose elementary mathematics paper in the Generic Elective/ Multidisciplinary course) .

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OR

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3-years polytechnic diploma from Board of Technical Education / equivalent with 10+2.
Lateral entry (BCA IIIrd Sem): Diploma in Computer Application / IT (DCA/DIT)/ Diploma (Polytechnic) in relevant stream with 10+2.

2.7.2 Programme Fee:
Rs. 6500/- semester plus exam/ degree/ Icard/etc. fee. The fee is deposited through online admission portal only.

2.7.3 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**

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

(b) Practical course: — **Max. Marks**

	Max. Marks
Terminal Examination	50
Assignment	30
Terminal Practical Examination	20
Total	**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

Letter Grade	Grade Point
O (outstanding)	10
A+ (Excellent)	9
A (Very good)	8
B+ (Good)	7
B (Above average)	6
C (Average)	5
P (Pass)	4
F (Fail)	0
Ab (Absent)	0

Learner is required to score at least a 'P' grade 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 BCA degree.

Computation of CGPA and SGPA
As per the University Policy

2.7.4 Multiple Entry and Multiple Exit options

The 3-year BCA programme is an Outcome-Based Education (OBE) for qualifications of different types. The qualification types and examples of title/nomenclature for qualifications within each type are indicated in Table 1.

Table 1				
Level	Qualification title	Programme duration	Entry Option	Exit option
5	Certificate in Computer Application	Programme duration: First year (first two semesters) of the BCA programme	10+2 **OR** 3-years diploma from Board of Technical Education / equivalent with 10+2	Awarded with Undergraduate Certificate in Computer Application
6	Undergraduate Diploma in Computer Application	Programme duration: First two years (first four semesters) of the BCA programme	Undergraduate Certificate obtained after completing the first year (two semesters) of the BCA programme/ Diploma in Computer Application / IT (DCA/DIT)/ Diploma (Polytechnic) in relevant stream with 10+2.	Awarded with Undergraduate Diploma in Computer Application
7	Bachelor in Computer Application	Programme duration: First three years (first six semesters) of the of the BCA programme	Undergraduate diploma obtained after completing two years (four semesters) of the BCA programme	Awarded with Bachelor of Computer Application

2.8 Requirement of the laboratory support and Library Resources

The practical sessions are held in the computer laboratories of the Study Centre. In these labs, the learner will have the facility to use the equipment and consumables relevant to the syllabus. The

lab courses are also mapped with the virtual lab(www.vlab.co.in) and the learners having computing facility can perform lab practical from home/ workplace also. 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.

2.9 Cost estimate of the programme and the provisions

3-year Bachelor of Computer Application programme consists of 25 theory and laboratory courses and 01 major 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	5000	12,50,000
2	Editing of 250 units	2500	6,25,000
3	BOS Meetings etc.	100000	100000
		Total	19,75,000

2.10 Quality assurance mechanism and expected programme outcomes

(a) **Quality assurance mechanism:** The program structure is developed under the guidance of the Expert committee comprising external expert members of the concerned subjects followed by the Board of Studies. 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.