Programme Project Report (PPR)
Bachelor of Computer Applications (BCA)
2024-25

ARKA JAIN Centre for
Distance and Online Education
ARKA JAIN University, Jharkhand

About ARKA JAIN University

ARKA JAIN University was established in 2017. The University is situated in the serene, picturesque and green campus of 18.15 acres in the neighbourhood district of India's first Industrial City Jamshedpur (Tata Nagar). It is located in the tribal district of Seraikela–Kharsawan of Jharkhand. The University obtained 2(f) status from the University Grants Commission (UGC) and thus recognized by it as a degree awarding Institution. ARKA JAIN University is the first private university in the entire Kolhan region of Jharkhand which comprises of three districts namely East Singhbhum, West Singhbhum and Seraikela–Kharsawan. Based on its academic and research performance, innovation outputs and societal. ARKA JAIN University is the first state Private University in Bihar, Jharkhand & West Bengal to be NAAC Grade A accredited. The University is ranked 3rd among the Top 15 emerging state private universities in the country by the prestigious Outlook iCare University rankings.

Vision:

To Develop Human Capital by creating spirited learning environment by empowering the students with knowledge, skills and instil social responsibility towards holistic development

Mission

- To impart multidisciplinary and a holistic education in order to ensure the unity and integrity of all knowledge
- To create academic impact through a combination of age-old tradition with modern scientific knowledge
- To create a lifelong learning environment that nurtures intellectual inquisitiveness, holistic & critical thinking, ethics and human values, equity and inclusion, and life skills, and thus making students responsible citizens and nation builder
- To augment the employability aspect of students as per global requirements
- To provide ideal environment for research, innovation, consultancy and entrepreneurship for larger and wider socio-economic and humanistic progress
- To endow the faculty and staff members with necessary means so that they can deliver on the stated lines

- To create a global tribe of technocrats, managers, entrepreneurs, scientists, biologists, pharmacists, artists and other professionals
- To engage with industry, and society at large, in productive manner
- To promote respect for diversity and respect for the local context in all curriculum, pedagogy, and policy

Quality Policy

- To make sure that the academic programmes meet the accepted norms as per the stakeholder's requirements
- To ensure effective functioning of processes, systems and policies pertaining to quality standards at various levels
- To foster quality enhancement to realise academic excellence
- To empower students with knowledge, skills, attitudes by imparting quality education

Core Value

- Ethics and integrity
- Environmental consciousness & sustainable development
- Promotion of Indian culture & heritage
- Active citizenry
- Intellectual and Moral Uprightness
- Service to society and contribution towards national development

Bachelor of Computer Applications

1. Programme's Mission and Objectives

Mission:

- To promote quality education, training, research, consultancy, and enhance employability and entrepreneurial skills of our students.
- To prepare our students in an immersive way for the world of work, developing an effective interface with the industry and other institutes within and outside the country is the cornerstone of our approach.
- To meet these ends, we encourage and nurture the development of students' physical, mental, emotional, secular, and spiritual faculties.

    The programme aims to achieve the following objectives:

Objective

- To create practically experienced professionals in the areas of programming, databases, software engineering, web-designing and networking and other computer application areas to develop knowledge in various domain-based prospects
- To encourage learners to communicate effectively and to improve their competency in creating real time IT solutions
- To enable learners to employ modern computer languages and applications to develop a successful career
- To provide opportunities for the learners to become entrepreneurs and aspire for further up skilling
- To provide a platform where the students experience all-round development in various disciplines through the courses designed in line with New Education Policy

2. Relevance of the Program with HEI's Mission and Goals

ARKA JAIN University, Jharkhand was established with a vision to become a University with commitment to excellence in education, research and innovation aimed towards human advancement.

The Bachelor of Computer Application programme examines our ideas and decisions, as well as the assumptions that guide our behaviours and thought processes. It also determines the degree to which these assumptions are true and legitimate. The program's objective is to efficiently convey concepts and complicated information that makes use of knowledge to address theoretical and practical issues. The stakeholder will exhibit scientific temperaments in day-to-day interactions and comprehend the moral implications of their choices, taking responsibility for them and being able to learn independently and throughout their lives.

The OL program's objectives are to offer educational opportunities to all eligible and eager individuals who, for personal or professional reasons, are unable to enrol in conventional courses. Due to personal and professional obligations, many prospective students are unable to enrol in regular courses. The program's aims and objectives align with the mission and vision of HEI.

The proposed programme is highly relevant to the AJU's mission i.e.

- Facilitate holistic education through knowledge sharing, skilling, research and entrepreneurial development.
- Integrate academic and industrial collaborations towards nation's development.
- Mentor students' physical, mental, emotional, secular and spiritual attributes to become a valued human resource

As it aims to provide quality education to those aspiring candidates who are deprived of higher education due to the limited number of intake in the conventional mode of education in the Universities.

Moreover, to keep the quality intact the curriculum and syllabus has been designed at par with the conventional mode keeping in mind the specific needs and acceptability of the learners' OL mode and in keeping with the aims and objectives of the University also ensuring the industry and future skills relevance.

3. Nature of Prospective Target group of learners

The curriculum of BCA is designed to equipped students with programming skills, algorithm development and database management system. The students are prepared to explore opportunities being demand in IT Industry. The learners who are not bounded by a fixed schedule but want to enhance their knowledge along with learning flexibility.

The target group of learners will be those students who are deprived of admission in the regular mode due to limited intake capacity, dropouts primarily due to social, financial, and economic compulsions as well as demographic reasons, population of any age and those living in remote areas where higher education institutes are not easily accessible. Delivery through OL mode also contributes towards Gross Enrolment Ratio (GER) of 50% by 2035, as envisaged by the Government of India.

Candidates who want to take admission into the BCA programme must fulfil the following requirements in order to be eligible –

1. To obtain admission in BCA program offered through OL mode, the learner must have completed 10+2 in any stream.

2. The learner must have pass at 10+2 examination

The OL- BCA program offered by ARKA JAIN University caters the needs of diverse groups of undergraduate students from all disciplines living in the varied regions and social structures. These students include those from low-income backgrounds, those who live in rural areas, women, and minorities who have limited access to traditional higher education institutions.

4. Appropriateness of Programme to be conducted in online learning mode to acquire specific skills and competence

The learning during the course duration will involve in inculcating the skills in the field of Computer Science and Information Technology. The degree will provide value to the learners about programming, data analysis, artificial intelligence etc. The University has identified the following Programme Outcomes (PO) and Programme Specific Outcomes (PSO) as acquisition of specific skills and competence in BCA Programme. Programme Outcomes (PO)

<u>Programme Outcomes (PO)</u>

[PO.1]. Domain knowledge: Apply the knowledge of mathematics, science, computer fundamentals, and computer applications to the solution of complex problems. Identify and analyze software application problems in multiple aspects including coding, testing and implementation in industrial applications.

[PO.2]. Effective Communication: Speak, read, write and listen clearly in person and through electronic media in the context of language and literature that helps the students to learn and make accurate use of English in their respective field and communicate effectively.

[PO.3]. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern techniques and IT tools including prediction and modeling to complex activities with an understanding of the limitations.

[PO.4]. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

[PO.5]. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

[PO.6]. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

[PO.7]. Problem analysis: Identify, formulate, review research literature, and analyze complex problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and computer sciences.

[PO.8]. Project management: Demonstrate knowledge and understanding of the software design and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

[PO.9]. Individual & Team Work: Ability to work as a member or leader in diverse teams in multidisciplinary environment.

[PO.10]. Self-directed and Lifelong learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes (PSO)

[PSO.1]. Prepare professionally trained in the areas of programming, databases, software engineering, web designing and networking and other application areas to acquire knowledge in various domain-based prospects.

[PSO.2]. Encourage to communicate effectively and to improve their competency skills to solve real time problems.

[PSO.3]. Understand to employ modern computer languages and applications for their successful career, to create platforms to become an entrepreneur and a relish for higher studies.

5. Instructional Design

The program is divided into six semesters and minimum credit requirement is 132 to get BCA degree through OL mode from ARKA JAIN University. Minimum time period for acquiring BCA degree will be three years and maximum time (extended) period is six years.

Curriculum Design

The syllabi and the self-learning material is designed by the experienced faculty members of the ARKA JAIN University in consultation with contents experts in the field of Computer Science & IT. It is then forwarded approved by the Board of Studies, the Centre for Internal Quality Assurance, and the University Academic Council.

Syllabi, PPR and self-learning materials are developed mostly by experienced faculty members of ARKA JAIN University in consultation with contents experts and the same will be forwarded to CIQA and Board of Studies/Academic Council/ Executive Council for further suggestions and approval.

Course Materials

Learning material is prepared for the courses by teams of experts drawn from conventional universities, Management institutions and professionals and in-house faculty. These materials are Edited by the content experts and language experts before they are finally sent to the press. Similarly, audio and video programmes are produced in consultation with the course writers, in-house faculty and producers. These materials are previewed and reviewed by the faculty as well as outside experts and edited or modified wherever necessary before they are dispatched to the Study Centres.

Duration

The total duration of the program is 3 years, consist of 6 semesters.

Faculty and Support Staff

The University has identified the requisite faculties and support staff as mandated by the UGC and those staff members have been assigned the post specifically for the OL mode programme. The Course material prepared by the Centre of Distance and Online Education faculty is as per the guidelines and regulations 2020 set by UGC.

Instructional Delivery Mechanism

The OL of ARKA JAIN University follows the usage of the modern ICT (Information & Communication Technology) enabled approach for instruction. Learning material will be provided to the students through Print Media. Audio Video material, E-books or E-notes, and technological support through Learning Management System will be provided to the students to enable two way communication between the learner and the provider.

Medium of Instruction

The medium of instructions and examination in ENGLISH only.

Programme Structure

The BCA Programme consists of 6 semesters, two semesters in each Year.

Programme Structure and Detailed Syllabus				
Semester 1				
Course Code	Title	Internal	External	Credits
BCA-OL-101	English	30	70	4
BCA-OL-102	Fundamentals of Mathematics	30	70	4

BCA-OL-103	Computer Fundamentals and Organization	30	70	4
BCA-OL-104	Fundamentals of Digital Computers	30	70	3
BCA-OL-105	Programming in C	30	70	3
BCA-OL-106	Quantitative Techniques for Management	30	70	4
	Learning Lab			
BCA-OL-107	Fundamentals of Digital Computers Lab	15	35	1
BCA-OL-108	Programming in C Lab	15	35	1
	Total			24
Semester II				
BCA-OL-201	Object Oriented Programming using C++	30	70	3
BCA-OL-202	Data Structures	30	70	3
BCA-OL-203	Operating System	30	70	4
BCA-OL-204	Computer Networks	30	70	4
BCA-OL-205	Indian Knowledge System	30	70	4
BCA-OL-206	Communicative English	30	70	4
	Learning Lab			
BCA-OL-207	Object Oriented Programming using C++ Lab	15	35	1
BCA-OL-208	Data Structures Lab	15	35	1
	Total			24
Semester III				
BCA-OL-301	E-Commerce	30	70	4
BCA-OL-302	Design & Analysis of Algorithms	30	70	4
BCA-OL-303	Programming with Java	30	70	3
BCA-OL-304	Database Management System	30	70	3
BCA-OL-305	Environmental Science	30	70	4
	Learning Lab			
BCA-OL-306	Programming with Java Lab	15	35	1
BCA-OL-307	Database Management System Lab	15	35	1
	Total			20
Semester IV				
BCA-OL-401	Python Programming	30	70	3
BCA-OL-402	Artificial Intelligence	30	70	4
BCA-OL-403	Web Technologies	30	70	3
BCA-OL-404	Cloud Computing	30	70	4
BCA-OL-405	Entrepreneurship	30	70	4
Learning Lab				
BCA-OL-406	Python Programming Lab	15	35	1
BCA-OL-407	Web Technologies Lab	15	35	1
	Total			20

Semester V				
BCA-OL-501	Software Engineering	30	70	4
BCA-OL-502	.NET Technology	30	70	3
BCA-OL-503	Mobile Application Development	30	70	3
BCA-OL-504	Research Methodology	30	70	4
BCA-OL-505	Personal and Managerial Effectiveness	30	70	4
Learning Lab				
BCA-OL-506	.NET Technology Lab	15	35	1
BCA-OL-507	Mobile Application Development Lab	15	35	1
	Total			20
Semester VI				
BCA-OL-601	IT Project Management	30	70	4
BCA-OL-602	IT Laws & Cybersecurity	30	70	4
BCA-OL-603	Software Testing	30	70	4
BCA-OL-604	Ethics and Values	30	70	4
BCA-OL-605	Project	30	70	4
	Total			20
	Total Credits			**128**

Student Support Systems

For easy and seamless services to students, the University has established the necessary arrangements for a variety of support services, including a counselling schedule and resource-oriented services evaluation methods and dates both on and off line modes to provide easy and smooth services for the students in the online learning mode.

There is now just one study centre on campus at the University. The University is not promoting any off campus study centre. The student will receive all student support services via an online and onsite single window system.

A coordinator who hold at least the position of Assistant Professor will head the study centre at the University. Depending on the needs of the students, these coordinators may add academic and non-academic staff.

6. Procedure for Admission, Curriculum Transaction and Evaluation

The proposed programme in OL mode will be conducted by ARKA JAIN University with the support of various departments of the University. Eligibility criteria, course structure, detailed curriculum, duration of programme and evaluation criteria shall be approved by Board of Studies and Academic Council, AJU, Jharkhand which are based on UGC guidelines for the programmes which comes under the purview of OL mode for award of Degree.

Details of Procedure for admission in which eligibility criteria for admission and fee structure of the course, Curriculum includes Program delivery, norms for delivery of courses in OL mode, use of IT services to academic support services, course design academic calendar and Evaluation which includes Distribution of Marks in Continuous internal assessments, Minimum Passing criteria and system of Grading formats are given in detail as under.

6.1 Admission Process

- Student can apply online, and send their form and copy of the certificates /credentials to the Programme Coordinator
- Upon selection, the offer of admission letter shall be sent to the students with instructions to pay fees online/ DD.
- On receipt of fees, admission is confirmed, and enrolment number and Identity Card will be issued.

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6.2 Minimum Eligibility Criteria for Admission

The minimum qualification required to apply is a pass in the 12th class / 10+2 examination from any recognized Board

6.3 Program Fees

Fees applicable for the BCA online program will be Rs. 20,000 per semester (Rs. 40,000 per year). The semester fees also includes the Examination fees and other provisions fees. Programme fees can be paid through Demand Draft, Cash & Cheque, online at the time of admission.

6.4 Registration Fees

Rs. 3000/- to be paid (towards processing charges) through Demand Draft at the time of submission of Application Form along with relevant copies of certificates and mark sheet

6.5 Activity Schedule:

S. No.	Activity	Tentative months schedule (specify months) during year			
		From (Month)	To (Month)	From (Month)	To (Month)
1	Admission	Jul	Sep	Jan	Feb
2	Assignment submission (if any)	Oct	Dec	Apr	Jun
3	Evaluation of Assignment	Nov	Dec	Apr	May
4	Examination	Dec	Jan	Jun	Jun
5	Declaration of Result	Jan	Feb	Jul	Aug
6	Re-registration	Jan	Feb	Jul	Sep
7	Distribution of SLM	Sep	Nov	Mar	Apr
8	Contact Programmes (counselling, Practical's. etc.)	Oct	Dec	Apr	Jun

6.6 Evaluation

a. **Continuous evaluation in the form of assignments (Weightage 30%)**
This component carries the weightage of 30%. There will 20 % marks midterm examination and 10% on Projects /Assignments / Activities.

b. **Term-end Examination (Weightage 70%)**
End term examination will conducted twice in a year odd semester in the month of December and even in the month June. The students will be allowed for the examination if he/she fills the examination registration form. For appearing in the Examination, every student has to submit an examination form through on-line before the due date.

7. Requirement of the Laboratory Support and Library Resources

The library at the ARKA JAIN University aims to support the academic mission and intellectual culture of the community by providing access to a well-organized collection of information and guidance on how to assess, evaluate, and access it.

The University library fosters advanced learning and discovery by providing access to a wide range of resources for study, research and creative work to ensure and promote a vibrant exchange of ideas in the quest for knowledge.

Laboratory Support

A student desirous to complete BCA Programme is supposed to perform practicals related with IT Tools, Programming in 'C' / C++/ Java & DBMS and other related practical courses. Structured Lab manuals will be provided by the University for this purpose.

Library Resources

ARKA JAIN University has excellent library with all the books required for the course learning and reference books for the course of BCA. Adequate online learning links and e-learning materials will also be provided to students which will be support students in their learning cycle.

The Library is automated using LIBMAN and OPAC an integrated (Open Access). The Library has linked with SCC online, Manupatra, All india reporter and delnet. There are 2400 items incorporated in the LIBMAN LMS. In terms of e-resources subscribers are guided towards 26 destinations for e-books, 16 destinations for e-journals, 7 destinations for e-thesis, 24 destinations for e-databases, 36 destinations for e-reference, 14 destinations for e-magazines/ news digest, 16 destinations for digital repositories and 18 destinations for e-learning.

8. Cost Estimate of the Programme and the Provisions

The University covered the initial costs for infrastructure, manpower, printing of self-study materials, and other expenses. The following information outlines how the university plans to distribute costs from the overall amount of fees collected:

a) Study Learning Material Development and Distribution	:	20%
b) Postal Expense	:	10%
c) Salary and other Administrative expenses	:	60%
d) Future development	:	10%

Programme fees has to be planned in accordance with guidelines and norms set up by the University Grants Commission rules after they are operational.

9. Quality assurance mechanism and expected Programme Outcomes

The quality of the program depends on the course curriculum and syllabus which meets the requirement of the industry and creates the skillful learning in the students. The ultimate aim of BCA program in OL Mode is to enhance skills of the learners as managers, entrepreneurs and seeing them excel in their profession and meeting global standards too by upgrading their career opportunities.

The ARKA JAIN University has constituted Centre for Internal Quality Assurance (CIQA). The CIQA will do periodic assessment of the online learning course material and audio video tutorials and will assure that the quality of learning is maintained and time to time changes are made as per the requirement of the course. The CIQA will also access the quality of assignments, quizzes and end term assessment time to time and required changes will be assured by them to maintain the quality of the learning program. CIQA will assure that the learning is made a truly global experience for the learner along with inculcation of required skills in the learner as expected program outcome with ARKA JAIN University Jharkhand.

The University has established the Centre for Internal Quality Assurance (CIQA) / Internal Quality Assurance Cell (IQAC) in the University campus. The CIQA / IQAC will monitor and maintain the quality of the Online programmes. It has the following objectives in making the compliances of quality implementations.

Objectives

The goal of the Centre for Internal Quality Assurance, also known as the Internal Quality Assurance Cell, is to create and implement a dynamic and all-encompassing internal quality assurance system to guarantee that the higher education programmes offered by higher education institutions online and through open and distance learning are of a quality that is acceptable and continuously improved.

Functions of CIQA

The functions of Centre for Internal Quality Assurance would be following:

i. To maintain quality in the services provided to the learners.

ii. To undertake self-evaluative and reflective exercises for continual quality improvement in all the systems and processes of the Higher Educational Institution.

iii. To contribute in the identification of the key areas in which Higher Educational Institution should maintain quality.

iv. To devise mechanism to ensure that the quality of Open and Distance Learning programmes and Online programmes matches with the quality of relevant programmes in conventional mode.

v. To devise mechanisms for interaction with and obtaining feedback from all stakeholders namely, learners, teachers, staff, parents, society, employers, and Government for quality improvement.

vi. To suggest measures to the authorities of Higher Educational Institution for qualitative improvement.

vii. To facilitate the implementation of its recommendations through periodic reviews.

viii. To organize workshops/ seminars/ symposium on quality related themes, ensure participation of all stakeholders, and disseminate the reports of such activities among all the stakeholders in Higher Educational Institution.

ix. To develop and collate best practices in all areas leading to quality enhancement in services to the learners and disseminate the same all concerned in Higher Educational Institution.

x. To collect, collate and disseminate accurate, complete and reliable statistics about the quality of the programme (s).

xi. To ensure that Programme Project Report for each programme is according to the norms and guidelines prescribed by the Commission and wherever necessary by the appropriate regulatory authority having control over the programme.

xii. To put in place a mechanism to ensure the proper implementation of Programme Project Reports.

xiii. To maintain are cord of Annual Plans and Annual Reports of Higher Educational Institution, review them periodically and generate actionable reports.

xiv. To provide inputs to the Higher Educational Institution for restructuring of programmes in order to make them relevant to the job market.

xv. To facilitate system based research on ways of creating learner centric environment and to bring about qualitative change in the entire system.

xvi. To act as a nodal coordinating unit for seeking assessment and accreditation from a designated body for accreditation such as NAAC etc.

xvii. To adopt measures to ensure internalization and institutionalization of quality enhancement practices through periodic accreditation and audit.

xviii. To coordinate between Higher Educational Institution and the Commission for various qualities related initiatives or guidelines.

xix. To obtain information from other Higher Educational Institutions on various quality benchmarks or parameters and best practices.

xx. To record activities undertaken on quality assurance in the form of an annual report of Centre for Internal Quality Assurance.

xxi. It will be mandatory for Centre for Internal Quality Assurance to submit Annual Reports to the Statutory Authorities or Bodies of the Higher Educational Institution about its activities at the end of each academic session. A copy of report in the format as specified by the Commission, duly approved by the statutory authorities of the Higher Educational Institution shall be submitted annually to the Commission.

After enrolling BCA Programme at ARKA JAIN University in Online Learning mode, student will exhibit understanding in areas such as critical thinking, effective communication and develop problem solving, scientific temperament with right set of ethics and attitude towards environment and sustainability. After completion of BCA. Programme, student will participate in multiple functional areas of science and technology.