

PROGRAM PROJECT REPORT

Bachelor of Computer Applications
ODL

1	Degree Awarding body	Graphic Era Deemed to be University, Dehradun
2	Teaching institution	Graphic Era Directorate of Online and Distance Learning
3	Name of the Program (specified by UGC / AICTE etc.)	Bachelor of Computer Applications
4	Minimum duration of the program (yrs.) as per UGC norms	3 Years
5	Minimum eligibility for admission	10+2 with Mathematics
6	Program Credit	98
7	Program level	Bachelors
8	Nature of Target Group of Learners	Adults/ Professional Learners/Experienced Professionals
9	Date of commencement	2019
10	Type of Program: Professional or General	Professional

a) Program's mission & objectives

Mission statement:

To provide quality education in information technology through the combination of theory, and practice to enhance students compatibility in applications development, and to prepare next generation of engineers, and computer scientists.

Program Objective

1. This program aims at developing Computer Skills to the learners.
2. The program will allow Learners to gain knowledge about computers in an "ALL AROUND" fashion; which will include both hardware and software components

3. The program will develop programming and networking skills of the learners
4. Learners of the BCA Program will have theoretical as well as practical knowledge and demonstrate application of technical principles in a professional work setting

b) Relevance of the program with HEI's Mission and Goals:

Institutional Mission:

The mission of the institution is to promote learning in true spirit and offering knowledge and skills in order to succeed as learners. The institution aims to distinguish itself as a diverse, socially responsible learning community with a high quality academic rigor.

Institutional Goals:

- To understand the student's aspirations, corporate goals and the policies of Govt. and design programs in the specific field to meet the overall education needs and develop the skills and competencies accordingly.
- Provide efficient admission counseling, registration, and student support system to demonstrate our commitment to help students and faculty to show that we indeed care for them.
- To create a conducive learning environment.
- Constantly improve systems and processes in accordance with feedbacks and random surveys on student's assessment.
- To provide an educational delivery system that is flexible, technology driven meets the prevailing requirements and is cost effective.

Linkage with Program Mission:

The institute's mission goals are holistically inherited in this program of Graphic Era Directorate of Open and Distance Learning. This program delivers required theoretical and industry inputs to students that develop creative thinking to make them experts and professionals in the field. The programs offered allow the learners to learn at their own pace along with pursuing their other professional endeavours. The cost of the programs and provision for scholarship have been designed with objective of spreading mass education to meet needs of all class of learners. The students' support services are taking timely feedback to ensure timely response and enhance overall quality standards. In all, the programs offered by Graphic Era Directorate of Open and Distance Learning ensure continuous education and meeting the needs of all class of learners.

c) Nature of prospective target group of learners

Adults/ Professional Learners/Experienced Professionals

d) Appropriateness of program to be conducted in Open and Distance Learning mode to acquire specific skills and competence :

Bachelor of Computer Applications program provides high-quality academic and technical training covering key concepts in computer applications and software design, development, and implementation.

Demands of skills and competencies are varying at faster pace, due to competitive and rapid market changes predominately in Small and Medium Enterprises, which urges for provision of flexible, work-integrated, continuous training, learning and development opportunities through Higher Education Institutions. The traditional and formal educational delivery may not achieve this at rapidly changing demand with flexible approach such as online, open and distance mode would meet the aspirations of many learners. Distance and Online education is more costs effective and can take place while continuing full-time employment.

A team of faculty & professionals from both regular & distance learning institutes & industry determines the objectives. It is then vetted by board studies, academic councils & other university

Statutory boards. The program objectives are determined with a view that it meets the requirement of the industry/business that employs our students. Therefore the consistent interaction with the industry becomes necessary to revise and update the program objective to meet the requirement, coupled with environmental factors.

Graphic Era offers outcome based education, having industry centric curriculum. This enables the students to satisfy their scholastic needs and aspirations as the system provides enhanced learning opportunities. The curriculum, pedagogy and assessment process are driven by the desired outcome. Outcome Based Education promises high level of learning for all students as it facilitates the achievement of the outcomes, characterized by its appropriateness to each learner's development level.

Outcome based education system is a systematic, evaluative process that is implemented to secure learning experiences that are congruent with original goals and objectives; thereby providing a basis for the effectiveness and continuous quality improvement of the Program of study. It focuses on the measurement of outcomes that have taken place based on strategies and actions implemented in the pursuit of achieving a pre-determined objective.

Our Programs have well defined Program Education Objectives (PEOs) and Program Learning Outcomes (PLOs) for its programs. The relationship of PEOs and PLOs are clearly indicated through the mapping of learning outcomes with the established Objective. Each outcome addresses some objective and achievement of outcome indicates the attainment of Objective. The assessment of each learning outcome is done annually to identify that the established learning objectives are achieved. The gaps identified after the analysis are addressed through the properly laid action plan. The results of the annual assessments and other data are used to determine the effectiveness of the Program during the Program review process. It also ensures that outcomes achieved are consistent with the mission of institution, domain and University.

Each course has its specific Objective around which the entire curriculum is built. The Learning Outcomes are the results of the course and must lie in complete harmony with the assigned Objectives. In order to ensure that the objectives and outcomes are in complete synchronization with the course outline, the department uses a list of assessment methods to analyze the output by examining the learners from different aspects. Program Educational Objectives/Goals and Learning Outcome of Business Management Programs have been developed.

Program Learning Outcome

The Learner will be able to:

1. Identify potential sources of Business environment information using technologies.
2. Synthesize and define an idea from multiple information sources using a number of software and techniques.
3. Find opportunities to improve the business value chain as an IT professional.
4. Develop basic accounting and business skills and display excellent computer applications to them.

e)Instructional Design :

Course Curriculum: Institution adopts specialized approach where the task involved in course design & development is assigned to professionals in the particular department of the university and/or external experts. A draft with the objectives in prepared. It is evaluated by Institution who

in turn composes a team of experts to have judicious review of the proposed course that it meets the objectives of distance education.

Program Structure: Institution constitutes a team of experts to review the course structure. The review team provides its feedback and recommendations to the concern faculty. In case of any modifications suggested by the review team, the curriculum of the course is re-worked upon.

Study Materials: The study material is Self-Learning (SLM) format, which is the essence of standard distance learning Programs. Thus Institution initiates to develop all materials in SLM format. Experts, both internal & external to write the study material on the specific guidelines laid down by statutory body.

Review by Board of Studies: The course is meticulously reviewed by BOS. Recommendations of BOS are implemented on priority. It also checks & defines the applicability, credit hours, scheme of examination for the course.

Approval by Academic Council: Finally, the course is submitted to the Academic council of the University for Final Approval.

Programs are offered on semester basis. A modular approach towards pursuing a long term degree Program is implemented. The breakup of one credit worth of student's effort, namely 30 hrs, typically has the following components. Academic activities are linked together to engage learner and maximize learning.

Study time	Approx. percentage of Credit
Print material including Audio/Video material	55%
Work related exercises practical/Quizzes and Assignments	25%
Through Web conferencing tool/internet based.	20%

□ **Program Structure: Bachelor Of Computer Applications**

SEMESTER

SUBJECT

Subject Credit

1st	Programming Concepts using C Language	3
	Computer Fundamentals and Information Technology	3
	Mathematical Foundation of Computer Science	3
	Principles and Practices of Management	3
	Communication and Soft Skills	2
	Programming in 'C' Lab	2
2nd	Data Structures and File organization	3
	Digital Electronics	3

	Discrete Mathematical Structures	3
	Financial Accounting	3
	Environmental Studies	2
	Data Structure Lab	2
3rd	Data Communication and Computer Networks	3
	Object Oriented Programming Concepts using C ++	3
	Data Base Management System	3
	Operating systems	3
	C ++ Lab	2
	DBMS Lab	2
4th	Software Engineering	3
	Computer Graphics	3
	Network Security	3
	Computer Organization and Architecture	3
	Computer Graphics Lab	2
	Software Engineering Lab	2
5th	JAVA Programming	3

	Distributed Systems	3
	Optimization Techniques	3
	Multimedia Technology and Animation	3
	JAVA Programming Lab	2
	Multimedia and Animation Lab	2
6th	Data Mining and Warehousing	3
	Web technologies	3
	Web Technologies Lab	2
	Project Work	10

*20% MOOC credit to be considered as per the University Norms.

- Duration of the program, 3 Year

Student support service systems.

Our endeavor leads to students overall development of professional competencies, human values, work ethics and spiritual values. Welfare of a student describes the 'health, happiness, and

professional growth of the student. Students are counseled both online & face to face as well. It becomes the students endeavor to understand the intricacies of the corporate environment on these grooming grounds & mentoring forms an indispensable and significant aspect of a student's life at Graphic Era. The changed scenario of the corporate world brings a new gamut of industry expectations from young professionals today. Periodic departmental meetings with all stakeholders further extended to look into the areas of improvements.

Students are supported in all phases of their Academic progression with Graphic Era.

Pre-Joining Support: Students are duly provided information about programs, courses, entry requirements, application procedures, structures, functions, rules, and regulations of the institute, recognition of institute, special features of the programs and so on. Counseling services for deciding what kind of individual support they might need and best way of achieving their academic and career target.

On-Joining Support: On completion of admission the students are provided with study materials, assignments. The issues related to returning to Academic environment after a long gap is addressed by the institution. The learners are provided with progress on assignments, examinations, Project work and extension of program if student is not able to complete the program in stipulated period. Orientation training is conducted by institution at the beginning of the semester.

On Program Completion: Students are guided on participations in convocations. In additions facilitating to acquire additional knowledge & skills through programs conducted by the institution and its constituents

Student's feedback sessions are conducted for students to share their valuable feedbacks. Feedback is collected on periodical basis during the Academic session. The Online feedback is transparent for the faculties so that the faculty members can improvise. The suggestions from students are also obtained where they can feed their suggestions/complaints for any point of concern. The complaints/suggestions are entertained by different level of hierarchy of the institution.

Academic LMS portal mitigates the challenge of seamless Student -Institution communication. Highly technology enabled platform is available for the students to quote their issue, which are answered by our well trained counselors. Students interact with our counselors either through telephone; email, chats or they directly log into their student's zone & register their complaints. The problems are resolved directly in case of telephonic conversation and chats, however the queries received through mails and through student's login are tried to be resolved within stipulated time. If the queries cannot be resolved at the counselor's end, they are escalated to the concerned department as per the query and are awaited for the response. Once the counselor receives the solution for the requisite problem, they are put in the student's zone of the concerned student.

f) Procedure for admissions, curriculum transaction and evaluation

Academic Programs/Courses will be conducted by Graphic Era Directorate of Open and Distance Learning in Online Learning Mode which may be termed as "flexi-mode" for award of Degree, Diploma and Certificate. Their Course Structure, Minimum Eligibility conditions and entry level qualifications for Admission and their minimum and maximum duration shall be as approved by the Academic Council and the Executive Council.

Eligibility Criteria for admission – 10+2 with Mathematics in last qualifying examination.

Procedure For Admissions

- a) The University will notify Academic Calendar of Programs/Courses for compliance by Graphic Era Directorate of Open and Distance Learning.
- b) Based on the calendar Graphic Era Directorate of Open and Distance Learning finalize the entire schedule of admissions. The student can now file the Application Online uploading the attested copies of relevant documents. The documents are verified at various levels and upon verifying the eligibility payment link is offered to student to pay the fee online through payment gate way. Information brochures and prospectus are available online and can be accessed any time. No fee is charged for this facility.

Program Delivery Policy

Graphic Era has established a robust Academic Delivery mechanism to ensure Quality Education at every stage.

- Fully Online Academic Delivery
- Periodic review of Curriculum and Study material
- Live Interactive lectures from eminent faculty experts
- Systematic and structured Personal Contact Programs
- User friendly LMS as Learning platform
- 24x7 Academic & Technical support
- Full-fledged archived class-room recorded lectures

Graphic Era has a pool of Qualified expert faculty and dedicated academic counselors to support and

mentor students to make learning more engaging and maintain high level retention.

Our Self-paced course wares have clear and measurable Learning outcomes; outcome is assessed with the Continuous and Summative Assessment process. Course Delivery Plan is given to the students at the commencement of new Academic Session; it is uploaded on Students Academic portal.

Personal Contact Programs (PCPs) constitute doubt clearing sessions where students interact with the subject experts (Faculty) & may clear their doubts at selected locations. It helps the students to develop better understanding of the concepts studied through Self Learning Material (SLM). PCP schedules are invariably posted on Students portal.

At Graphic Era, academic excellence is the central focus of teaching and learning. The academic rigorous and relevancy provide the students an advantage to grow into leaders in their chosen fields. Graphic Era Distance learning program have a schedule of activities within prescribed time frame. The Academic Calendar includes all teaching-learning activities, for complete academic year.

Teaching Pedagogy

Graphic Era Online and Distance Learning Programs are delivered in Blended Learning Mode. It is pedagogical approach applied to the practice of using both online and instructor-led learning experiences when teaching students. In a blended-learning methodology we have integrated online with traditional face-to-face class activities in a planned through Contact program. Graphic Era has established virtual facilities as component of the learning environment. Learner Support Services are provided through the campus-wide web portal and e-Learning platform. A pedagogical approach with application of Information and Communication Technology and expertise in e-learning provides a seamless learner-centered environment. Faculty - Students Personal Contact Session helps students to clear their doubts and engage in learning activities.

Evaluation Policy

- Evaluation of student performance in each course-unit has two components: (a) internal continuous assessment(assignments) and (b) the semester/year examinations which are held at the end of Semester/Academic Year.
- The level of student academic performance as the aggregate of continuous evaluation and end semester/year examination is reflected by letter grades on a ten-point scale according to the connotations given below:

Per Cent Marks in a Course (CWS+MSE+ESE)	Grades	Grade points	Rating
>85	O	10	Outstanding
75-84	A+	9	Excellent
65-74	A	8	Very Good
55-64	B+	7	Good
50-54	B	6	Above average
45-49	C	5	Average
40-44	P	4	Pass
<40	F	0	Fail
	AB	0	Absent
	DB	0	Debarred

The grades shall be awarded on the basis of cutoff marks or grade boundaries decided as follows:

A histogram is plotted: marks vs frequency (number of students).

The grade boundaries are decided on following basis:

Up to 10% of students can get O grades

Principle of natural breaks in the distribution of marks shall be applied for other grades

Students securing 40 marks or above shall not be awarded F grade. They shall be put in P grade.

There shall be a Grade Moderation Committee constituted by the Vice Chancellor to scrutinize the grade boundaries.

Calculation of SGPA & CGPA

SGPA

$$SGPA = \frac{\sum_{x=1}^n C_x \cdot GP_x}{\sum_{x=1}^n C_x}$$

where,

C_x = Number of credits assigned to the x^{th} course in a semester

GP_x = Grade Point earned in the x^{th} course

n = Number of courses in the semester

CGPA

$$CGPA = \frac{\sum_{i=1}^N C_i \cdot GP_i}{\sum_{i=1}^N C_i}$$

where,

C_i = Number of credits assigned in the i^{th} course

GP_i = Grade points earned in i^{th} course.

N = represents the number of courses in which student was registered and earned a grade 'P' and above up to the semester for which CGPA is to be calculated.

MINIMUM ACADEMIC REQUIREMENTS:

- The student must score a minimum Grade 'P' in each course unit.
- The minimum passing SGPA for each semester is 4.5 for Under Graduate Programs and 5.0 for Post Graduate, Integrated and Dual Degree Programs.
- The student should secure a minimum overall Cumulative Grade Point Average (CGPA) of 6 in the case of Post Graduate, Integrated and Dual Degree Programs and 5.0 in the case of Under Graduate programs at the end of final year.

SEMESTER GRADE POINT AVERAGE:

The semester performance of the student is indicated as "Semester Grade Point Average (SGPA)" at the end of every semester. SGPA is the weighted average of Grade Points of all letter grades secured by a student for all the course units in the Semester.

Web-based tool

Graphic Era Learning Management System (LMS) is a scalable, reliable foundation for a world-class learning experience with powerful functionality and new streamlined options. In A-LMS, students can engage in learning anywhere, at any time. LMS is a personal, intuitive, always-on, and connected virtual learning platform with following features:

- Assessments, Assignments and Project Work: A-LMS is offering online submission of assignments and project works along with online continuous assessment pattern for internal examinations
- Plagiarism Check: The Project work and assignments submitted/uploaded will be analyzed through an inbuilt plagiarism check option, which also generates a report about the copied texts.
- Interactive Forum and Collaborative Learning: This feature enables real time communication of "Instructor-Learner" and "Learner-Learner"
- Notes Making and Retrieving: Personal journal can be maintained by learners on the LMS in which they can write their queries and notes for future references.

g) Requirement of the laboratory support and Library Resources:

Our learning resources include a host of self-learning materials that help the learners in gaining knowledge through multiple modes. This way retention and application of knowledge become simple and easy. The components of our learning package are as follows:

- Course material in SLM format: The course material provided to learners is designed as per SLM guidelines by DEB.
- Provision of Reference book: The Institution provides the provision of reference book to students who want to get extra knowledge on a particular subject.
- Personal Contact Program (PCP): The Institution conducts Personal Contact Program (PCP) at weekends to help students interact with the faculty and get their queries and doubts resolved.
- One to One classes: From time to time, the Institution conducts one to one class online for students on demand basis.
- Doubt clearing session: A provision to interact with subject faculties is also facilitated to students. Students can clear their doubts one to one with faculty members.
- Assignments, Case Studies, Project Work: Apart from the main learning material, students are provided with assignments, case studies and project work. These learning components are generally based contemporary situation in the industry and markets.
- Leadership Lecture Series: The Institution conducts Leadership Lecture Series, a face to face program to help students gain leadership skills.
- Webinars
- Recording of seminar / Conference / Workshop available Online
- Guidance by Course coordinator through telephone email & chat rooms: Students are provided guidance by Course coordinator as and when required through telephone, email & chat.

- Online Library access; The students access to online library, which hosts a large number of books in digital format.
- Mentor-mentee concept: Institution believes in strong mentor-mentee concept. Students queries are answered by mentors suitable. This has proved to be very effective tools between Institution & students.
- Special session on technical subjects: Some of the subjects requires extra efforts, therefore extra session are planned for the same.
- Virtual recorded classes: Lectures with their busy schedule ay not spare time during PCP's. The recorded lectures are available.
- Occasional Workshops / Guest lecture: the Institution arranges workshop & guest lecture by an industry leader to help students know the view of the industry.

h) Quality assurance mechanism and expected program outcomes :

SSSSSSSS has constituted Internal Quality Assurance Cell (IQAC), as per the guidelines of National Assessment and Accreditation Council (NAAC) in which academicians, industry representatives and other stakeholders are nominated as members. IQAC has a mandate to review the teaching and learning process. The Primary aim of the IQAC is to develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.

Upon successful completion of the BCA program students can explore career opportunities in private / public sector organizations and government departments in industries including IT & ITES, energy and resources, financial services, infrastructure, and banking as software engineer, computer programmer, information security analyst, network engineer, database administrator, test engineer, quality assurance engineer, customer / help desk /technical support engineer, and multimedia / web programmer, among others

The process of regular feedback is carried out to ensure the quality of the Programs. The feedback form is shared per student zone on their learning management system. A few of the criteria questions if the Program fits to enhance their professional goals, to check the program content quality and its relevance, on addressing the queries of students, response rate from students' support team, rating of quality of videos, effectiveness of the examination system, appropriateness of technology, video lectures, and students' overall satisfaction as a distance learner.

Based on students' feedback and internal review of the Programs, the content of the Program is reviewed for its relevancy in the industry every 3 years. This is the process followed to ensure the academic excellence and practical application of the Program.