Mahatma Jyotiba Phule

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Uttar Pradesh, India

BACHELOR OF COMPUTER APPLICATION

Ordinance

महात्मा ज्योतिबा फुले
रुहेलखण्ड विश्वविद्यालय, बरेली

THE Three - YEAR **BCA** PROGRAMME

EFFECTIVE FROM 2024-25 SESSION

MJP ROHILKHAND UNIVERSITY, BAREILLY

REVISED ORDINANCES GOVERNING

THE U.G. PROGRAM LEADING TO THE 3 YEAR B.C.A. DEGREE

The Bachelor of Computer Application (BCA) shall be three years duration i.e. first, second and third year, each consisting of two semesters. However, after successful completion of First Year a Certificate can be awarded, Second Year a Diploma can be awarded and Third Year a Bachelor degree will be awarded.

1) Scheme of Course of the study:

(i) The 3-year BCA course is divided into 6 semesters. It will include lectures, tutorials, practicals, seminars, internships, projects, etc., as defined in the syllabus, scheme of examination and instructions issued by the University from time to time.

(ii) The academic session ordinarily ends by May of the following year. It is divided into two semesters: the odd semester (from July to December/January) and the even Semester (from January to May/June). Each of the two semesters ordinarily lasts about seventeen weeks, including the examination period and University holidays.

(iii) English/Hindi shall be the medium of instructions in lectures. University examinations, Question paper internal/external/class test/admission test including presentations and viva-voce examinations preferably in English.

(iv) The subjects, assessment procedure and credit allocation for each semester of each academic year will be based on the course structure, subject to revision by the Board of Studies of the University.

(v) In order to ensure multi-disciplinary approach in subjects at the UG-level, CBCS has been partially implemented from the 2nd semester to the 6th semester of BCA. Separate list of elective subjects has been provided in the syllabus for each semester and students will choose one elective subject from the list given for their respective semester.

2) Admission:

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Admission to the BCA programme, whether in the first or second year, will be carried out as per the regulations specified the University from time to time. Reservation policies set by the university and the government will be duly followed during the admission process.

3) Eligibility for Admissions:

(i) The eligibility requirement for admission to the First Year, Ist Semester of this program is that the candidate must have successfully completed the Class 10+2 examination with Mathematics as a subject and secured at least 50% marks (45% for SC/ST categories). *Students aspiring to pursue a BCA who have not studied Mathematics in their 12th grade must enroll in Mathematics as an elective course (E1) during the second semester and successfully complete it.* The purpose of the bridge course is to provide the mathematical foundation required for the BCA programmme.

(ii) The University has the authority to alter or revoke the eligibility criteria outlined in clause 3(i), in compliance with Government regulations.

4) Attendance:

(i) For credit validation successful completion of examination is essential. Without appearing in examination credit will be incomplete.

(ii) For appearing in final examination 75% attendance is mandatory.

5) Credit and Credit determination:

(i) One paper of one credit will require one hour per week teaching. For example, one semester of 15 week will require 15-hour teaching.

(ii) Apprenticeship/Internship/Project work with one credit will require two hour per week. For example, one semester of 15-week will require 30-hrs of work for Apprenticeship/Internship/Project work

(iii) All work related to credit will be carried out as per the directions of 'Academic Bank of Credit'.

6) Provision of Multiple-Exit and Awarding Certificate, Diploma, and Degrees:

(i) The maximum duration of programme will be as per regulations and recommendations of the statutory bodies governing the BCA programme as prescribed by the University. The total duration for completing the BCA programme from the date of admission in first year to completion of BCA degree (including Breaks) shall not exceed 6 years.

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The details of qualification to be awarded in compliance with NEP-2020 as Certificate / Diploma / Degree in line with the exit options, entry options, and its credit requirements are given in Table1.

(ii) Students who earn a minimum of 48 credits after completing the first year of the BCA program will be awarded a one-year certificate upon exiting. Those who complete the second year and accumulate at least 96 credits will receive a two-year diploma, while students who earn 144 credits will be awarded a three-year degree. The aforesaid mentioned certificate, diploma or degree will be awarded only when the student successfully clears all the qualifying papers required for the same.

(iii) Once the credits earned by the student are utilized, it cannot be utilized again by the student. For example, if a student receives one year certificate after earning 48 credits, the credit earned by the student will be treated as utilized. If after a few years, the student wants to obtain two-year Diploma, then he will have to surrender his certificate received earlier and thus he will get a re-credit of 48 credits to his/her account. Otherwise, he/she will have to earn 96 credits. If the student studies all three years and earns 144 points and does not claim for certificate and diploma only then he/she will get a three years Degree.

Table 1:

No of Years of Completion	Qualification Awarded	Exit Options	Credit Requirement	Entry Options
One Year (I & II Semester)	Certificate in Computer Application (CCA)	Students have an option of exiting the programme after completion of first year (Semester I and II)	Students are required to complete minimum 48 credits.	Students who exit with a Certificate in Computer Application (CCA) are permitted to re-enter within three years from the date when student took break and may complete the BCA programme
Two Years (I to IV Semester)	Diploma in Computer Application (DCA)	Students have an option of exiting the programme after completion of second year i.e. semesters I, II, III, and IV)	Students are required to complete minimum 96 credits.	Students who exit the Diploma in Computer Applications (DCA) program may be permitted to re-admit within three years from their break and may complete the BCA program, provided their total period of study does not exceed six years by the end of the programme.
Three Years (I to VI Semester)	Bachelor of Computer Application (BCA) Degree	After successful completion of all six semesters	Degree shall only be awarded if the student earns full 144 credits.	If a student fails to complete the BCA programme within twice the duration of the programme, he/she will not be allowed to continue his/her studies.

7) Examination:

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(i) All theory papers will be of 03 hours duration, subject to revision by the competent authority of the University. The maximum marks allotted for each paper will be 75.

(ii) The performance of a student in a semester shall be evaluated through continuous class assessment and end semester examination. The continuous assessment shall be based on class tests, assignments/tutorials, quizzes/viva-voce and attendance. The marks for continuous assessment (Sessional marks) shall be awarded at the end of the semester. The end semester examination shall be conducted by means of written papers, practical and/or viva- voce, inspection of certified course work in classes, project work, and design reports or by means of any combination of these methods.

(iii) The distribution of marks for sessional, end semester theory papers, practical and other examinations, seminars and project etc. shall be as per the prescribed scheme of examination.

(iv) The marks obtained in a subject shall consist of marks allotted in end semester theory paper, practical examination and sessional work. The minimum passing marks in each subject shall be 40% (including end-sem and sessional-marks) and grade will be awarded based on the marks obtained as per table given in clause 11. If there is no provision for sessional marks in any subject/practical/project etc., the minimum passing marks in the final semester examination in that subject/practical/project will be 40%.

(v) If a student receives an "O" to "E" grade in any subject/practical/project, or etc., they will be considered to have passed for the particular subject. If a student receives an "F" and "ab" grade in any subject/practical/project, or etc., they will be considered to have failed for the particular subject.

8) Guidelines for Internal Evaluation:

(i) There shall be one mid-semester written test (MWT) of two hours duration for each paper for internal assessment under the supervision of the Principal or HOD, which shall carry 15 marks. The question paper for the same will be prepared by the respective subject teachers, covering 50% of the total syllabus as per the university's guidelines and subject teachers will evaluate the answer sheets of the concerned subjects.

(ii) Whenever the marks in MWT are 80% or more, the answer sheets of the written examination will be re-evaluated by two teachers of the Department.

(iii) The remaining 10 marks (out of 25 Internal-Marks) will also be awarded by the subject teacher of the concerned college on the basis of Assignments (03 Marks), Quizzes (03 Marks), and regularity in attendance (04 Marks).

(iv) All assignments will be submitted in his/her handwriting only.

(v) In case, if any student fails to appear in one or more papers of sessional examination

(MWT) on medical grounds or any other unavoidable circumstances, then he/she may be provided one more chance during the same semester on payment of re-examination fee of Rs. 1000/- for one or more papers.

(vi) The academic committee of the respective college, consisting of the Principal, Examination Incharge, and HODs, will address and resolve any student grievances related to the internal assessment.

9) Unfair means:

Cases of unfair means shall be dealt as per the rules of the University and the Government Public Examination (Prevention of Unfair means) Act if any in force.

10) Assessment of Practical, Project/Dissertation and Summer Training / Industrial Training:

(i) The University will appoint internal/external examiner for evaluation of the Practical, project/dissertation and the examiners shall evaluate the same as per the University guidelines.

(ii) After BCA-IV Semester examination students will go on 6 to 8 weeks industrial training/internship in the software sector/industrial or educational unit during summer vacations. The college will also assign some faculty member to look after the student's internship. The software development unit/educational center will also assign a suitable officer to supervise the students. At the end of the industrial training/internship they will issue a certificate to the students that he/she successfully completed his/her industrial training/internship according the norms of University. And after successful completion of the training, the concerned students will submit their training completion certificate along with the training report in the form of a project. This is strictly clear that without successful industrial training/internship the Degree programme will not be awarded. The report will be evaluated by one external examiner and one internal examiner appointed by university in the Vth semester.

11) Structure of Grading of Academic Performance:

The following shall be the structure of grading for academic performance of the students:

11.1   Award of Grades:

Students obtaining grades "O" to "E" shall be declared pass in particular subject. Students failing in subject will be awarded "F" grade. The grades shall be decided on the aggregate of evaluation of all the components like: -

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(i) Internal evaluation: MWT, and Assignments, Quizzes, and regularity in attendance.

(ii) End semester examination.

(iii) Practical, industrial training and Project shall be evaluated & graded as per guideline.

11.2 Structure of Grades and Grade Points:

Marks Range (out of 100)	Grade	Grade Point
90 – 100	O - Outstanding	10
80 – 89	A - Excellent	9
70 – 79	B – Very Good	8
60 – 69	C - Good	7
50 – 59	D - Average	6
40 – 49	E - Pass	5
00 – 39	F – Fail	0
Absent	Ab - Fail	0

12) Assessment of Performance and Declaration of Results:

The performance of a student will be evaluated in terms of two indices, viz., the Semester Grade Point Average (SGPA) which is the Grade point Average for a semester, Year Grade Point Average (YGPA) which is the Grade point Average for both semester of an academic year and Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point in time. The SGPA is calculated on the basis of grades obtained in all courses, except audit/non-credit courses, registered in the semester.

12.1 Criteria for passing the programme:

(i) **Passing a semester:**

a) At the end semester examination, a student shall be awarded a grade in each subject according to his/her performance in that subject, and he/she shall be awarded a semester Grade Point Average (SGPA) calculated as follows:

$$SGPA = \frac{\sum_{\forall\ subjects} Credits \times Grade\ Points}{\sum_{\forall\ subjects} credits}$$

b) A student shall be considered to have PASSED the semester if he/she has obtained a Grade as per the Table in **clause-11** and **clause-7** in each subject of the Semester.

c) A Student shall be declared to have FAILED in a particular subject, if he/she fails to fulfil the condition in clause-7.

d) A Student shall be automatically promoted to the even semester irrespective of whether he/she passes or fails the odd semester examination.

(ii) **Passing a Year:**

a) At the end of each Part, a student shall be awarded a Yearly Grade Point Average (YGPA) Which shall be calculated as follows:

$$YGPA = \frac{\sum_{\forall \text{ subjects of odd \& Even Semester of the Part}} Credits \times Grade\ Points}{\sum_{\forall \text{ subjects of odd \& Even Semester of the Part}} credits}$$

b) A student shall be considered to have PASSED the year if he/she has passed each semester as per **Clause-7,** Table in **clause-11** and has secured YGPA equal to or greater than 5.50.

c) A Student cannot be promoted to the next year, if he/she fails to fulfil either YGPA condition or has more than three back papers as per clause-7 or/and both. For further academic progress, he/she can take readmission by paying the readmission fee as applicable and repeat the year again.

d) **Promotion Criteria for Students with Backlogs or Insufficient YGPA**

The following students will be promoted to the next academic year even if they do not meet the YGPA requirement or have backlogs in up to three subjects or both. These students will be allowed to appear in back-paper examination in maximum three subjects along with regular students on payment of prescribed fee. The sessional/internal marks for these subjects will remain unchanged.

I. **Students with three Backlogs:**

Students who have received an "F" or "ab" grade in maximum of three subjects will be eligible to appear in back-paper examinations for those subjects. They must clear the backlog subjects within a maximum of two attempts of back-paper examination.

II. **Students with YGPA deficiency without Backlogs**

Students who have passed all subjects but have YGPA between 5.0 and 5.50 will be allowed to select maximum of three subjects for back-paper examinations to improve their grades. However, they will get only one

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attempt to improve their grades.

 (iii) **Passing the Degree Program**

  a) At the end of Year III (academic year) of the programme, a student who has PASSED Year I, II & Year III, of the BCA programme shall be awarded a Cumulative Grade Point Average (CGPA), which shall be calculated as follows:

$$CGPA = \frac{\sum_{\forall \, subjects \, of \, odd \, \& \, Even \, Semester \, of \, \forall \, Part} Credits \times Grade\ Points}{\sum_{\forall \, subjects \, of \, odd \, \& \, Even \, Semester \, of \, \forall \, Part} credits}$$

  b) To convert YGPA/CGPA into an equivalent percentage, it must be multiplied by 10. Because of the equivalent percentage, the empirical formula for converting YGPA/CGPA is: $X = Y \times 10$, where X is an equivalent percentage and Y is YGPA/CGPA.

  c) A student shall be considered to have passed the BCA Programme if he/she has passed Year I, Year II and Year III of the Program and has obtained a CGPA of 5.50 or more.

  d) A student shall be declared to have failed in the BCA Programme if he/she fails to fulfil the above condition.

  e) The Failed student shall have the option to repeat Year to fulfil above conditions, provided he/she has not exceeded the maximum period mentioned in Clause-12.2.

12.2 Maximum period of programme:

 Notwithstanding anything to the contrary contained in these Ordinances, a student shall not be permitted to continue his/her studies if he/she does not complete the BCA Programme within a maximum period of double the duration of the programme.

12.3 Classification of Result

 Based on the CGPA; the result of each student shall be declared as follows:

	CGPA	RESULT
(a)	8.50 and above, provided he/she has passed ▪ Year I, Year II and Year III in a single attempt	Pass with "First division with Honours"
(b)	6.5 and above, but less than 8.50	Pass with "First division"
(c)	5.50 and above, but less than 6.50	Pass with "Second division"
(d)	Below 5.50	Fail

13) Grade Cards

At the end of each semester examination, a Grade Card shall be awarded to every Student, which shall contain the information as presented by the university.

14) INTERPRETATIONS

If any questions arise regarding the interpretation of these regulations, the same shall be resolved/decided by the relevant council/bodies of the university. The council shall have the power to issue a clarification to remove any doubt that may arise regarding the implementation of these regulations prescribed in the ordinances.

COURSE STRUCTURE

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B.C.A. Course Structure w.e.f. 2024-25

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Course Structure

		Bachelor of Computer Application				
		Semester-wise Titles of the Papers				
Year	**Course Code**	**Course Title**	**Theory /Practical**	**Credits**	**Maximum Marks**	
					Internal	**External**
		First Semester				
First Year (Certificate in Computer Application)	BCA-101N	Computer Fundamentals and PC Software	Theory	4	25	75
	BCA-103N	Programming with C	Theory	4	25	75
	BCA-105N	Basic Mathematics	Theory	4	25	75
	BCA-107N	Communicative English	Theory	4	25	75
	BCA-109N	Principle of Management	Theory	4	25	75
	BCA-101P	**LAB:(PC Software lab)**	Practical	2	--	100
	BCA-103P	**LAB:(C Programming)**	Practical	2	--	100
		Second Semester				
	BCA-102N	Data Structures using C	Theory	4	25	75
	BCA-104N	Introduction to Database System	Theory	4	25	75
	BCA-****	**Elective Paper [one from the list] E1**	Theory	4	25	75
	BCA-106N	Business Organization & Management	Theory	4	25	75
	BCA-108N	Digital Electronics	Theory	4	25	75
	BCA-102P	**LAB:(Data Structure)**	Practical	2	--	100
	BCA-104P	**LAB:(RDBMS)**	Practical	2	--	100
		Third Semester				
Second Year (Diploma in Computer Application)	BCA-201N	Object oriented programming using JAVA	Theory	4	25	75
	BCA-203N	Numerical Analysis and Statistical Techniques	Theory	4	25	75
	BCA-****	**Elective Paper [one from the list] E2**	Theory	4	25	75
	BCA-205N	Operating System	Theory	4	25	75
	BCA-207N	Computer Organization and Architecture	Theory	4	25	75
	BCA-201P	**LAB:(JAVA Programming)**	Practical	2	--	100
	BCA-203P	**LAB:(NAST)**	Practical	2	--	100
		Fourth Semester				
	BCA-202N	Programming in Python	Theory	4	25	75
	BCA-204N	Unix and Shell Programming	Theory	4	25	75
	BCA-****	**Elective Paper [one from the list] E3**	Theory	4	25	75

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	BCA-206N	Accounting and Financial Management	Theory	4	25	75
	BCA-208N	Computer Networks	Theory	4	25	75
	BCA-202P	**LAB:(Python Programming)**	Practical	2	--	100
	BCA-204P	**LAB:(Unix and Shell Programming)**	Practical	2	--	100

Note: After BCA IV Semester examination students will go on 6 to 8 weeks industrial training/internship during summer vacations. And after successful completion of the training, the concerned students will submit their training completion certificate along with the training report in the form of a project.

		Fifth Semester				
	BCA-301N	Artificial Intelligence	Theory	4	25	75
	BCA-303N	Web Technologies	Theory	4	25	75
	BCA-****	**Elective Paper [one from the list] E4**	Theory	4	25	75
	BCA-305N	Computer Graphics and Animation	Theory	4	25	75
	BCA-303P	**LAB: (Web Technologies)**	Practical	2	--	100
	BCA-305P	**LAB: (Computer Graphics)**	Practical	2	--	100
	BCA-307P	Industrial training	Internship / Project	4	--	100
		Sixth Semester				
	BCA-302 N	Introduction to Data science	Theory	4	25	75
	BCA-304 N	Cloud Computing	Theory	4	25	75
	BCA-****	**Elective Paper [one from the list] E5**	Theory	4	25	75
	BCA-306 N	Internet of Things	Theory	4	25	75
	BCA-302 P	**LAB: (Data Science)**	Practical	2	--	100
	BCA-308 P	**Major Project**	Project/ Practical	6	--	100

Third Year (Bachelor of Computer Application)

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Elective Papers (for BCA)

List of Elective Papers E1

S.No.	Course Code	Course Title	To be Opted in the Semester
1	BCA-401E	Mathematics	II
2	BCA-402E	Environment and Ecology	II
3	BCA-403E	Introduction to E-Governance	II

Note: In the second semester, mathematics (BCA-401E) will be a compulsory subject from the list of elective papers E1 for those students who did not have Mathematics in Intermediate (12th) class.

List of Elective Papers E2

S.No.	Course Code	Course Title	To be Opted in the Semester
1	BCA-411E	Discrete Mathematics	III
2	BCA-412E	Personality and Soft Skills Development	III
3	BCA-413E	Information System for Business	III

List of Elective Papers E3

S.No.	Course Code	Course Title	To be Opted in the Semester
1	BCA-421E	E-Commerce	IV
2	BCA-422E	IT Acts and Cyber Laws	IV
3	BCA-423E	Software Engineering	IV

List of Elective Papers E4

S. No.	Course Code	Course Title	To be Opted in the Semester
1	BCA-431E	Introduction to Cyber Security	V
2	BCA-432E	GUI Programming	V
3	BCA-433E	Operation Research	V

List of Elective Papers E5

S. No.	Course Code	Course Title	To be Opted in the Semester
1	BCA-441E	Software Testing	VI
2	BCA-442E	Advanced Web Development Technologies	VI
3	BCA-443E	Blockchain Foundations	VI

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