

Babasaheb Bhimrao Ambedkar University

(A Central University)

Satellite Centre Amethi

Department of Computer Science

(w.e.f. session 2023-24)

Course Structure

BCA(Honours) / BCA (Honours with Research)

4 Year Programme

(As per NEP-2020)

Date of BUGS recommendation/approval: 14.09.2023

Prepared by: Dr. Aditya Khamparia (Coordinator-DCS)



Course Structure (BCA) [w.e.f. 2023-24]

S. No.	Semester	Category of Courses	Paper Code & Name of the Courses	Credit	Remarks
I Semester					
1.	I	Multidisciplinary (CBCS)	(As per the Nomenclature of the other Department offering the CBCS course)	04	To be taken from other Department/School
2.	I	Major (Core)	BCA-111 Computer Systems and Organization	04	
3.	I	Major (Core)	BCA-112 Programming in C	04	
4.	I	Ability Enhancement Courses	Course focused on English Language and Communication Skills	04	To be offered by the University
5.	I	Skill Enhancement Courses	BCA-113 Web Designing	02	
6.	I	Value Added Courses common for all UG	To be selected from pool of value-added course offered by University as per Annexure I	02	To be offered by the University
Total Credits Required for I Semester				20	Grand Total-20 Credits
For Other Department	I	CBCS Offered by the Department	BCAOE-111 (A) Computer Fundamentals OR BCAOE-111(B) Fundamentals of Hardware and Networking	04	To be opted by the students of other Department
II Semester					
1.	II	Multidisciplinary (CBCS)	(As per the Nomenclature of the Department offering the CBCS course)	04	To be taken from other Department /School
2.	II	Major (Core)	BCA-121 Concepts of Object-Oriented Programming	04	
3.	II	Major (Core)	BCA-122 Discrete Mathematics	04	
4.	II	Skill Enhancement Courses	BCA-123 Python Programming	04	
5.	II	Value Added Courses common for all UG	Understanding Bharat	04	To be offered by the University 

Total Credits Required for II Semester				20	Grand Total-40 Credits
For Other Department	II	CBCS Offered by the Department	BCAOE121(A) Office Automation OR BCAOE121(B) Programming in C	04	To be opted by the students of other Department


ENTRY#: As per regulation **EXIT after 01 Year: AWARD OF Undergraduate Certificate** in the BCA after securing **40 Credits** provided the student secures additional 04 Credits in a Work-based Vocational Course/ Internship offered during the summer term in addition to 6 credits from skill-based courses earned during the first and second semesters.

III- SEMESTER

1.	III	Major (Core)	BCA-231 Operating Systems	04	
2.	III	Major (Core)	BCA-232 Fundamental of Software Engineering	04	
3.	III	Major (Core)	BCA-233 Data Structures	04	
4.	III	Minor-1(To be taken from other than the Major discipline)	Cyber Security Or Any other minor to be opt from other department or offered by other department	04	Selected once will remain the same up to the end of the programme
5.	III	Ability Enhancement Courses	Course focused on English Language and Communication Skills (To be offered by University)	04	To be offered by University

Total Credits Required for III Semester				20	Grand Total-60 Credits
For Other Department/ Minor Discipline	III	Minor (Data Science)	BCA-245 (Data Visualization)	04	(To be offered by the Department for others)


IV- Semester

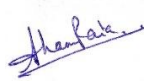
1.	IV	Major (Core)	BCA-241 Computer Networks	04	
2.	IV	Major (Core)	BCA-242 Enterprise Resource Planning Systems	04	

3.	IV	Major (Core)	BCA-243 Database Management Systems	04	
4.	IV	Minor-2 (To be taken from other than the Major discipline and Minor-1)	Data Science OR Any other minor to be offered by department	04	Selected once will remain the same up to the end of the programme
5.	IV	Skill Enhancement Courses	BCA-244 Database Management Systems Lab	04	
Total Credits Required for IV Semester				20	Grand Total-80 Credits
For Other Department/ Minor Discipline	IV	Minor (Data Science)	BCA-245 (Data Visualization)	04	(To be offered by the Department for others)

ENTRY#: As per regulation **EXIT after 2 Years: AWARD OF Undergraduate Diploma** in the computer Application after securing **80 Credits** provided the student secures additional 04 Credits in a Work-based Vocational Course/ Internship offered during the first and second-year summer term

V Semester

1.	V	Major (Core)	BCA-351 Concepts of Java Programming	04	
2.	V	Major (Core)	BCA-352 Concepts of Data Mining and Warehouse	04	
3.	V	Minor-1	Cyber Security OR Any other minor to be opt from other department or offered by other department	04	Selected once will remain same up to the end of the programme
4.	V	Minor-2	Data Science OR Any other minor to be offered by department	04	Selected once will remain same up to the end of the programme
5.	V	Internship	BCA-354 Minor Project/Internship	04	

Total Credits Required for IV Semester				20 Credits	Grand Total-100 Credits
For Other Department/ Minor Discipline	V	Minor (Data Science)	BCA-355 Web Programming	04	(To be offered by the Department for others)
VI Semester					
1.	VI	Major (Core)	BCA-361 Artificial Intelligence	04	
2.	VI	Major (Core)	BCA-362 Software Project Management	04	
3.	VI	Major (Core)	BCA-363 Information Security and Cyber Laws	04	
4.	VI	Minor-1	Cyber Security OR Any other minor to be opt from other department or offered by other department	04	Selected once will remain the same up to the end of the programme
5.	VI	Minor-2	Data Science OR Any other minor to be offered by the department	04	Selected once will remain the same upto the end of the programme
Total Credits Required for VI Semester				20	Grand Total-120 Credits
For Other Department/ Minor Discipline	VI	Minor (Data Science)	BCA-365 Data Analytics	04	(To be offered by the Department for others)
EXIT after 3 Years: AWARD OF Undergraduate Degree in BCA upon securing 120 credits					
Level-08: 04 Year Degree with Honours					
VII Semester					
1.	VII	Major (Core)	BCA-471 Research Methodology	04	
2.	VII	Major (Core)	BCA-472 Design and analysis of Algorithm	04	
3.	VII	Major (Core)	BCA-473 Fundamentals of Image Processing	04	

4.	VII	Minor-1	Cyber Security OR Any other minor to be opt from other department or offered by other department	04	Selected once will remain the same up to the end of the programme
5.	VII	Minor-2	Data Science OR Any other minor to be offered by the department	04	Selected once will remain the same up to the end of the programme
Total Credits Required for VII Semester				20	Grand Total-140 Credits
For Other Department/ Minor Discipline	VII	Minor (Data Science)	BCA-474 Introduction to Machine Learning	04	(To be offered by the Department for others)
VIII Semester					
1.	VIII	Major (Core)	BCA-481 Technical Writing and Seminar	04	
2.	VIII	Major (Core)	BCA-482 Blockchain Technologies	04	
3.	VIII	Major (Core)	BCA-483 Mobile Computing	04	
4.	VIII	Major (Core)	BCA-484 Introduction to Knowledge Management	04	
5.	VIII	Major (Core)	BCA-485 Software Testing and Quality Assurance	04	
Total Credits Required for VIII Semester				20	Grand Total-160 Credits
EXIT after 4 Years AWARD OF BCA (Honours) Degree (160 Credits minimum)					

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OR

Level-08: 4-year UG Degree (Honours with Research):

Students who secure 75% marks and above in the first six semesters and wish to undertake research at the undergraduate level

VII Semester

1.	VII	Major (Core)	BCA-471 Research Methodology	04	
2.	VII	Major (Core)	BCA-472 Design and analysis of Algorithm	04	
3.	VII	Minor-1	Cyber Security OR Any other minor to be opt from other department or offered by other department	04	Selected once will remain the same up to the end of the programme
4.	VII	Minor-2	Data Science OR Any other minor to be offered by the department	04	Selected once will remain the same up to the end of the programme
5.	VII	Research Project/ Dissertation	BCA-475 Research Ethics and Toolkits	04	
VII				20	Grand Total- 140 Credits
For Other Department/ Minor Discipline	VII	Minor (Data Science)	BCA-474 Introduction to Machine Learning	04	(To be offered by the Department for others)

VIII Semester

1.	VIII	Major (Core)	BCA-481 Technical Writing and Seminar	04	
2.	VIII	Major (Core)	BCA-486 Computational Tools and Techniques	04	
3.	VIII	Research Project/ Dissertation	BCA-487 Research Project/Dissertation	12	
Total Credits Required for VIII Semester				20	Grand Total- 160 Credits

EXIT after 4 Years AWARD OF BCA (Honours Degree with Research) in the BCA (160 credits minimum)

The research outcomes of the dissertation/ research Project work may be published in peer-reviewed journals or may be presented in at least two conferences /seminars or may be patented.

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