

## Program - BCA (Bachelor of Computer Applications)

### Program Structure 2023-24

S. No.	Major Discipline	Minor Discipline (Full Stack Development)
1	AI/ML	Web Application Development
2	Cyber Security	Java Application Development
3	Data Analytics	Mobile Application Development

Major Choices			
S. No.	AI/ML	Cyber Security	Data Analytics
1	Fundamentals of Artificial Intelligence	Fundamentals of Information Theory	Introduction to Big Data
2	Machine Learning Basics	Database Security and Access Control	Machine Learning Basics
3	Fuzzy Logic and Neural Network	Introduction to cryptography	Web Data Mining
4	Python Programming-II for Machine Learning	Python Programming-II & AI for Cyber Security	Python Programming-II for Data Science
5	Applications of AI	Computer and Network Security	BIG DATA FRAMEWORKS
6	ML in NLP	Security Assessment and Risk	Fundamental of Cloud Computing
7	Principles of Deep Learning	Cyber Threat Intelligence	Applications of Big Data Analytics

Category-wise Distribution of the Credits across the Programme									
Semester	Major	Minor	Multi-disciplinary	Ability Enhancement	Skill Enhancement	Value Added	Summer Internship	Research Project / Dissertation	Total Credits
I	5	3	3	2	3	4	0	0	20
II	5	5	3	2	3	2	0	0	20
III	7	5	3	2	3	0	0	0	20
IV	13	5	0	2	0	0	0	0	20
V	13	3	0	0	0	0	4	0	20
VI	17	3	0	0	0	0	0	0	20
VII	16	4	0	0	0	0	0	0	20
VIII	4	4	0	0	0	0	0	12	20
	80	32	9	8	9	6	4	12	160

First Semester								
S. No.	Course Code	Course Discipline	Course Title	Credit Structure				Contact Hours
				L	T	P	Credits	
1	23B61CS111	Major Core	Fundamentals of Programming	3	1	0	4	4
2	23B61CS112	Minor core	Web Technology	2	0	0	2	2
3	23B31MA111	MDC	Fundamentals of Mathematics	2	1	0	3	3
4	23B31HS111	AEC	English	2	0	0	2	2
5	23B61CS113	SEC	Multimedia Technology- I	2	0	0	2	2

6	23B66CS114	Value Added	Introduction to Digital Technologies	2	0	0	2	2
7	23B12BT111	Value Added	Environmental Science	2	0	0	2	2
8	23B65CS114	Major Core	Fundamentals of Programming Lab	0	0	1	1	2
9	23B65CS115	Minor core	Web Technology	0	0	1	1	2
10	23B65CS116	SEC	Multimedia Technology- I lab	0	0	1	1	2
<b>Total credits</b>							<b>20</b>	<b>23</b>

### Second Semester

				Credit Structure				
S. No.	Course Code	Course Discipline	Course Title	L	T	P	Credits	Contact Hours
1	23B61CS121	Major Core	Data Structures	3	1	0	4	4
2	23B61CS122	Minor Core	Database Management Systems	3	1	0	4	4
3	23B31MA112	MDC	Discrete Mathema	3	0	0	3	3
4	23B31HS112	AEC	Soft Skills -I	2	0	0	2	2
5	23B61CS123	SEC	Python- I	2	0	0	2	2
6	23B36HS111	Value Added	Everyday Psychology	2	0	0	2	2
7	23B65CS124	Major Core	Data Structures La	0	0	1	1	2
8	23B65CS125	Minor Core	Database Management Systems Lab	0	0	1	1	2
9	23B65CS126	SEC	Python- I Lab	0	0	1	1	2
<b>Total credits</b>							<b>20</b>	<b>23</b>

### Third Semester

				Credit Structure				
S. No.	Course Code	Course Discipline	Course Title	L	T	P	Credits	Contact Hours
1	23B61CS211	Major Core	Algorithm and Problem Solving (APS)	3	0	0	3	3
2	23B31MA211	Major Core	Probability and Statistics	3	0	0	3	3
3	23B61CS212	Minor Core	Object Oriented Programming (C++)	3	1	0	4	4
4	23xxxxxxxx	MDC	Digital Logic	3	0	0	3	3
5	23B31HS211	AEC	Soft Skills -II	2	0	0	2	2
6	23B61CS213	SEC	Multimedia Technology-II	2	0	0	2	2
7	23B65CS214	Major Core	Algorithm and Problem Solving (APS) Lab	0	0	1	1	2
8	23B65CS215	Minor Core	Object Oriented Programming (C++) Lab	0	0	1	1	2
9	23B65CS216	SEC	Multimedia Technology-II Lab	0	0	1	1	2
<b>Total credits</b>							<b>20</b>	<b>23</b>

Fourth Semester								
				Credit Structure				
S. No.	Course Code	Course Discipline	Course Title	L	T	P	Credits	Contact Hours
1	23B61CS221	Major Core	Software Engineering	3	0	0	3	3

2	23B61CS222	Major Core	Operating System	3	0	0	3	3
3		Major Choices	Major Choices-I	3	0	0	3	3
4		Major Choices	Major Choices-II	3	0	0	3	3
5	23B61CS223	Minor Core	Java Full Stack Development-I (Core Java)	3	1	0	4	4
6	23B31HS212	AEC	Life skills	2	0	0	2	2
7	23B65CS224	Major Core	Software Engineering Lab	0	0	1	1	2
8	23B65CS225	Minor Core	Java Full Stack Development-I (Core Java) Lab	0	0	1	1	2
<b>Total credits</b>							<b>20</b>	<b>22</b>

### Fifth Semester

S. No.	Course Code	Course Discipline	Course Title	Credit Structure			Credits	Contact Hours
				L	T	P		
1	23B61CS311	Major Core	Computer Organization and Architecture	3	1	0	4	4
2	23B61CS312	Major Core	Computer Network	3	0	0	3	3
3	23xxxxxxxx	Major Choices	Major Choices-III	2	0	0	2	2
4	23xxxxxxxx	Major Choices	Major Choices-IV	3	0	0	3	3
5	23xxxxxxxx	Major Choices	Major Choices-III L	0	0	1	1	2
5	23xxxxxxxx	Minor Choices	Full Stack Developer-I(Web development/Java/Mobile)	2	0	0	2	2
6	23B67CS313	Summer	Summer Internshi	0	0	0	4	0

7	23xxxxxxx	Minor Choices	Full Stack Developer-I(Web development/Java/Mobile) Lab	0	0	1	1	2
<b>Total credits</b>							<b>20</b>	<b>18</b>

Sixth Semester								
S. No.	Course Code	Course Discipline	Course Title	Credit Structure			Credits	Contact Hours
				L	T	P		
1	23B61CS321	Major Core	Introduction to Blockchain	3	1	0	4	4
2	23B61CS322	Major Core	Cloud Computing	3	1	0	4	4
3	23B61CS323	Major Core	Agile Software Development	3	0	0	3	3
4	23B61CS324	Major Core	IOT Analytics	3	0	0	3	3
5	23xxxxxxx	Major Choices	Major Choices -V	2	0	0	2	2
6	23xxxxxxx	Minor Choices	Full Stack Developer-II(Web development/Java/Mobile)	2	0	0	2	2
7	23xxxxxxx	Major Choices	Major Choices -V	0	0	1	1	2
8	23xxxxxxx	Minor Choices	Full Stack Developer-II(Web development/Java/Mobile) Lab	0	0	1	1	2
<b>Total credits</b>							<b>20</b>	<b>22</b>

<b>Total Program Credits upto 3 years</b>	<b>120</b>
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**Seventh Semester**

				Credit Structure				
S. No.	Course Code	Course Discipline	Course Title	L	T	P	Credits	Contact Hours
1	23B61CS411	Major Core	Large Scale graph Analysis	3	1	0	4	4
2	23B61CS412	Major Core	Game Theory	3	1	1	5	6
3	23B61CS413	Major Core	Meta heuristic optimization	3	0	1	4	5
4	23xxxxxxx	Major Choices	Major Choices -VI	3	0	0	3	3
5	23B61CS414	Minor Core	Information Retrieval	3	1	0	4	4
6	23B65CS415	Major Core	Game Theory Lab				0	0
7	23B65CS416	Major Core	Meta heuristic optimization Lab				0	0
<b>Total credits</b>							<b>20</b>	<b>22</b>

**Eighth Semester**

				Credit Structure				
S. No.	Course Code	Course Discipline	Course Title	L	T	P	Credits	Contact Hours
1	23B61CS421	Major Core	Introduction to De	2	0	0	2	2
2	23xxxxxxx	Major Choices	Major Choices - VII	2	0	0	2	2
3	23B61CS422	Minor Core	Social Network Analysis	3	1	0	4	4
4	23B67CS423 / 23B67CS424	Project	Research Project / Dissertation	0	0	0	12	-
<b>Total credits</b>							<b>20</b>	<b>8</b>

**Total Program Credits upto 4 years**

**160**

\*Note: Proposed Curriculum, subject to approval from academic council/BOS