e. Structure and Syllabus of the Programme:

Curriculum Framework Syllabus – B.C.A. 2022-23
L-5 First & Second Semester
B.C.A.: First Semester

Level / Semester	Nature of Course	Courses Code	Course Title	MM	L	T	P	C
L-5 First Semester	Discipline Specific: Major-1	CSA-DSM-111	Programming Using C	100	4	0	0	4
		CSA-DSM-112	Lab. Based on C-Programming	100	0	0	2	2
	Discipline Specific: Major-2	CSA-DSM-113	PC-Software	100	4	0	0	4
		CSA-DSM-114	Lab. Based on PC-Software	100	0	0	2	2
	Discipline Specific: Major-3	CSA-DSM-115	Mathematics for Computer Science	100	6	0	0	6
	Ability Enhancement Course (AEC)	CSA-AEC-111	Fundamental of Computer Science.	100	1	0	1	0
	Skill Enhancement Course (SEC)	CSA-SEC-111	Lab. Based ICT-I	100	0	0	2	2
	Value Enhancement Course (VEC)	VEC-111	Other Department					Qualifying
Total Credits								22

Level / Semester	Nature of Course	Courses Code	Course Title	MM	L	T	P	C
L-5 I Semester	Multi-Disciplinary: Major	CSA-MDM-111	Computer Education-I	100	6	0	0	6

B.C.A.: Second Semester

Level / Semester	Nature of Course	Courses Code	Course Title	MM	L	T	P	C
L-5 Second Semester	Discipline Specific: Major-1	CSA-DSM-211	Data Structure	100	4	0	0	4
		CSA-DSM-212	Lab. based on Data Structure using C	100	0	0	2	2
	Discipline Specific: Major-2	CSA-DSM-213	OOPS using C++	100	4	0	0	4
		CSA-DSM-214	Lab. Based on C++ Programming	100	0	0	2	2
	Discipline Specific: Major-3	CSA-DSM-215	Computer Organization	100	6	0	0	6
	Ability Enhancement Course (AEC)	CSA-AEC-211	Lab. Based on Web Designing	100	1	0	1	2
	Skill Enhancement Course (SEC)	CSA-SEC-211	Lab. Based ICT-II	100	0	0	2	2
	Value Enhancement Course (VEC)	VEC-211	Other Department					Qualifying
Total Credits								22
Exit with Certificate								

#DSM: Discipline Specific: Major, MDM: Multi – Disciplinary Major, AEC: Ability Enhancement Course, VEC: Value Enhancement Course, SEC: Skill Enhancement Course

Level / Semester	Nature of Course	Courses Code	Course Title	MM	L	T	P	C
L-5 II Semester	Multi-Disciplinary: Major	CSA-MDM-211	Computer Education-II	100	6	0	0	6

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Course Structure:

Semester 1									
Course Code	**Course Title**	**Credit**	**L**	**T**	**P**	**Sessional**		**ESE**	**Total**
						ME	**IA**		
CSA-CC-1201	Computer Organization and Architecture	4	3	1	-	20	20	60	100
CSA-CC-1202	Programming using C	4	3	1	-	20	20	60	100
CSA-CC-1203	Data Structure	4	3	1	-	20	20	60	100
CSA-CC-1204	Discrete Mathematics	4	3	1	-	20	20	60	100
CSA-CC-1205	Operating System	4	3	1	-	20	20	60	100
CSA-CC-1206	C Programming Lab	2	-	-	4	20	20	60	100
CSA-CC-1207	Data Structure Lab	2	-	-	4	20	20	60	100
	Total Credits	**24**	**15**	**5**	**8**				**700**
Semester 2									
Course Code	**Course Title**	**Credit**	**L**	**T**	**P**	**Sessional**		**ESE**	**Total**
						ME	**IA**		
CSA-CC-2201	Java Programming	4	3	1	-	20	20	60	100
CSA-CC-2202	Database Management Systems	4	3	1	-	20	20	60	100
CSA-CC-2203	Design and Analysis of Algorithm	4	3	1	-	20	20	60	100
CSA-CC-2204	Theory of Computation	4	3	1	-	20	20	60	100
CSA-CC-2205	Data Communication & Computer Networks	4	3	1	-	20	20	60	100
CSA-CC-2206	Java Programming Lab	2	-	-	4	20	20	60	100
CSA-CC-2207	DBMS Lab	2	-	-	4	20	20	60	100
	Total Credits	**24**	**15**	**5**	**8**				**700**
Out Department Paper									
	Out Department	2	-	-	-	20	20	60	100
	Total Credits	**26**	**15**	**5**	**8**				**800**
Paper Offered for other department students									
CSA-OE-2201	Computer Education – I	2	2	-	-	20	20	60	100
Semester 3									
Course Code	**Course Title**	**Credit**	**L**	**T**	**P**	**Sessional**		**ESE**	**Total**
						ME	**IA**		
CSA-CC-3201	Software Engineering	4	3	1	-	20	20	60	100
CSA-CC-3202	Programming with Python	4	3	1	-	20	20	60	100
CSA-CC-3203	AI & Machine Learning	4	3	1	-	20	20	60	100
CSA-CC-3204	WEB Application Design using PHP	4	3	1	-	20	20	60	100
Elective 1 (Opt any one of the following)									
CSA-EC-3201	Cryptography and Network Security	4	3	1	-	20	20	60	100
CSA-EC-3202	Scientific Computing	4	3	1	-	20	20	60	100
CSA-EC-3203	Computer Graphics	4	3	-	1	20	20	60	100
CSA-EC-3204	Ad-Hoc and Sensor Networks	4	3	1	-	20	20	60	100
CSA-EC-3205	Simulation and Modeling	4	3	1	-	20	20	60	100
CSA-CC-3205	Python Programming Lab	2	-	-	4	20	20	60	100
CSA-CC-3206	Web Application Lab	2	-	-	4	20	20	60	100

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Summary of Ph.D. Course Work (One Semester) in Computer Science

Semester 1									
Course Code	Course Title	Credit	L	T	P	Sessional		ESE	Total
						ME	IA		
CSA-CC-141	Research Methodology	4	-	-	-	20	20	60	100
CSA-CC-142	Data Structure and Algorithms	4	3	-	1	20	20	60	100
CSA-CC-143	Review of Published research work	4	-	-	-	20	20	60	100
CSA-CC-144	Research and Publication & Ethics	2	2	-	-	20	20	60	100
Elective 1 (Opt Any One of Following)									
CSA-EC-141	Data Mining	4	-	-	-	20	20	60	100
CSA-EC-142	Parallel Computing	4	-	-	-	20	20	60	100
CSA-EC-143	Machine Learning	4	3	-	1	20	20	60	100
CSA-EC-144	Cloud Computing	4	-	-	-				
CSA-EC-145	Image Processing and Computer Vision	4	3	1	-	20	20	60	100
CSA-EC-146	Advanced Pattern Recognition	4	-	-	1	20	20	60	100
CSA-EC-147	Simulation & Modeling	4	-	-	-	20	20	60	100
CSA-EC-148	Applied Cryptography	4	-	-	-	20	20	60	100

Approved by BoS Meeting on dated 16/09/2022

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