

CURRICULUM & SYLLABUS



CHOICE BASED CREDIT SYSTEM (CBCS)

FOR

Bachelor of Computer Application (Hons.)

or

**Bachelor of Computer Application (Hons.) with Research/
Academic Projects**

(A 4 Year Undergraduate Degree Program)

Under UGC Framework - 2022 based on NEP – 2020

[w. e. f. Academic Session 2023-2024]

**FACULTY OF SCIENCE & HUMANITIES
SRM UNIVERSITY DELHI-NCR, SONEPAT
Plot No.39, Rajiv Gandhi Education City, P.S. Rai, Sonapat
Haryana-131029**

BACHELOR OF COMPUTER APPLICATIONS DEGREE COURSE

PROGRAMME CREDIT STRUCTURE SEMESERWISE

Semesters → Courses J.	DENOTE	I	II	III	IV	V	VI	VII	VIII	TOTAL	%AGE
Humanities and Social Sciences (Including Management Courses) (Multidisciplinary)	MDC	3	3	3	-	-	-	-	-	9	5
Major Courses	CC	6	6	9	10	15	15	13/11	12	86/84	48/46
Minor Course	PE	4	4	4	4	8	4	0/4	0/4	28/36	15/20
Ability Enhancement Courses	AEC	2	2	2	2	-	-	-	-	8	4
Supportive Courses (Skill Development: Technical & Soft Skills)	SEC	2	2	2	2	1	1	-	-	10	6
Live Project	LP	-	4	-	4	-	4	4/0	6/4	22/16	12/9
Practical's	P	2	2	1	2	1	1	1	-	10	6
Value Added Courses	VAC	2	2	2	2	-	-	-	-	8	4
TOTAL		21	25	23	26	25	25	18/16	18/20	181/181	100

COURSE CURRICULUM

BACHELOR OF COMPUTER APPLICATIONS

DEGREE COURSE

PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-I

S.N o.	Course Code	Course Title	L	T	P	Credit s	Course Category
Theory							
1	23BCA101	Fundamentals of Computers	3	0	0	3	Major Course
2	23BCA102	Programming in C	3	0	0	3	Major Course
3	23BCA103	Fundamental Mathematics	4	0	0	4	Minor Stream Course
4	23MDCxx	MDC-1	3	0	0	3	Multidisciplinary Course
5		Functional English-I	2	0	0	2	Ability Enhancement Course
7	23VACxxx	Indian Constitution & Polity	2	0	0	2	Value Added Course
	Total Theory		17	0	0	17	
Practical							
8	23BCA105	Information Technology Lab	0	0	2	1	Major Course Lab
9	23BCA106	C Programming Lab	0	0	2	1	Major Course Lab
10	23SS151	Effective Communication Skills	0	0	2	1	Skill Enhancement Courses (Soft)
11	23SS101	Digital Literacy & IT Skills	0	0	2	1	Skill Enhancement Courses (Tech.)
	Total Practical		0	0	8	4	
	Total		17	0	8	21	

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PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-II

S.No	Course Code	Course Title	L	T	P	Credits	Course Category
Theory							
1	23BCA201	Data Structures using C	3	0	0	3	Major Course
2	23BCA202	Object Oriented Concepts using Java	3	0	0	3	Major Course
3	23BCA203	Discrete Mathematical Structures	4	0	0	4	Minor Stream Course
4	23MDCxxx	MDC-II	3	0	0	3	Multidisciplinary Course
5		Functional English-II	2	0	0	2	Ability Enhancement Course
7	23VACxxx	Environment Protection, Sustainable Development & Living	2	0	0	2	Value Added Course
	Total Theory		17	0	0	17	
Practical							
8	23BCA204	Data Structure Lab	0	0	2	1	Major Course Lab
9	23BCA205	Java Lab	0	0	2	1	Major Course Lab
10	23SS252	Teamwork & Interpersonal Skills	0	0	2	1	Skill Enhancement Courses (Soft)
11	23SS202	Advanced Excel Skills	0	0	2	1	Skill Enhancement Courses (Tech.)
12	23BCA206	Live Project	4	0	0	4	Live Projects/Vacational Courses/Summer Internship
	Total Practical		4	0	8	8	
	Total		21	0	8	25	

* Students would do Live Project/Vocational Course/Summer Internship of 4 Credits during Summer term of 6 to 8 weeks

On Exit, the students on completion of requisite requirement (of 48 credits) on completion of II-Semester, shall be awarded UG Certificate (in the field of study/discipline).

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PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-III

Sl.N o.	Course Code	Course Title	L	T	P	Credit s	Course Category
Theory							
1	23BCA301	Data Base Management Systems	3	0	0	3	Major Course
2	23BCA302	Data Communication & Networks	3	0	0	3	Major Course
3	23BCA303	Operating Systems Concepts	3	0	0	3	Major Course
4		Environmental Studies	4	0	0	4	Minor Stream Course
5	23MDCxxx	MDC-III	3	0	0	3	Multidisciplinary Course
6		Hindi-I/ German-I / French-I	2	0	0	2	Ability Enhancement Course
		Sports, Yoga and Fitness	1	0	2	2	Value Added Course
	Total Theory		19	0	0	20	
Practical							
7	23SS353	Presentation Skills	0	0	2	1	Skill Enhancement Courses (Soft)
8	23SS303	Statistical Skill with SPSS	0	0	2	1	Skill Enhancement Courses (Tech.)
10	23BCA304	DBMS LAB	0	0	2	1	Major Course Lab
	Total Practical		0	0	6	3	
	Total		19	0	6	23	

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PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-IV

Sl.N o.	Course Code	Course Title	L	T	P	Cre dits	Course Category
Theory							
1	23BCA401	Web Technologies	3	0	0	3	Major Course
2	23BCA402	Computer Multimedia and Animation	3	0	0	3	Major Course
3	23BCA403	Software Engineering	4	0	0	4	Major Course
4	23BCA404	Fundamental of E- Commerce	4	0	0	4	Minor Stream Course
5	23UAEC401	Hindi-II/German-II/ French-II	2	0	0	2	Ability Enhancement Course
	Total Theory		16	0	0	16	
Practical							
6	23BCA405	Multimedia and Animation LAB	0	0	2	1	Major Course Lab
7	23BCA406	Web Technologies Lab	0	0	2	1	Major Course Lab
8	23SS404	R language Programming	0	0	2	1	Skill Enhancement Courses (Tech.)
9	23SS454	Professional Skills	0	0	2	1	Skill Enhancement Courses (Soft)
9	23BCA407	Live Projects/Vacational Courses/Summer Internship	4	0	0	4	Live Projects/Vacational Courses/Summer Internship
	23VACxxx	AI &ML/ DS&BDA/ Drone Technology	2	0	0	2	Value Added Courses
	Total Practical		6	0	8	10	
	Total		22	0	8	26	

* Students would do Live Project/Vocational Course/Summer Internship of 4 Credits during Summer term of 6 to 8 week

On Exit, the students on completion of requisite requirement (of 98 credits) on completion of IV-Semester , shall be awarded UG Diploma (in the field of study/discipline).

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PROGRAMME COURSES STRUCTURE SEMESTERWISE
SEMESTER-V

Sl.N o.	Course Code	Course Title	L	T	P	Credi ts	Course Category
Theory							
1	23BCA501	Python Programming	3	0	0	3	Major Course
2	23BCA502	Cloud Computing	4	0	0	4	Major Course
3	23BCA503	Analysis and Design Algorithm	4	0	0	4	Major Course
4	23BCA504	Computer Architecture & Organization	4	0	0	4	Major Course
5	23BCA505	Software Project Management	4	0	0	4	Minor Stream Course
6	23BCA506	Unix & Linux Programming	4	0	0	4	Minor Stream Course
	Total Theory		23	0	0	23	
Practical							
7	23SS555	Aptitude and Reasoning	0	0	2	1	Skill Enhancement Courses
8	23BCA507	Python programming LAB	0	0	2	1	Major Course Lab
	Total Practical		2	0	4	2	
	Total		25	0	4	25	

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PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-VI

Sl.No .	Course Code	Course Title	L	T	P	Credit s	Course Category
Theory							
1	23BCA601	Artificial Intelligence and Applications	3	0	0	3	Major Course
2	23BCA602	Cyber Law and Cyber Security	4	0	0	4	Major Course
3	23BCA603	Software Testing	4	0	0	4	Major Course
4	23BCA604	Automata Theory	4	0	0	4	Major Course
5	23BCA605	Internet of Things (IoT)	4	0	0	4	Minor Stream Course
	Total Theory		19	0	0	19	
Practical							
6	23BCA606	Artificial Intelligence and Applications Lab	0	0	2	1	Major Course Lab
7	23SS505	Programming with MATLAB	0	0	2	1	Skill Enhancement Course(Tech.)
8	23BCA607	PROJECT	0	0	0	4	Major Course/SIP
	Total Practical		0	0	4	6	
	Total		19	0	4	25	

*Students would do Summer Internship of 4 Credits during Summer term of 6 to 8 weeks

On Exit, the students on completion of requisite requirement (of 148 credits) on completion of VI-Semester, shall be awarded UG Degree (in the field of study/discipline).

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PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-VII

Sl.N o.	Course Code	Course Title	L	T	P	Credi ts	Course Category
Theory							
1	23BCA701	Machine Learning	3	0	0	3	Major Course
2	23BCA702	Compiler Design	4	0	0	4	Major Course
3	23BCA703	Advanced Computer Networks	4	0	0	4	Major Course
4	23BCA704	Optimization Methods and Applications	4	0	0	4	Major/Minor Course*
5	23BCA705	Research Methodology	2	0	0	2	Major Course#
	Total Theory		15	0	0	13/15	
Practical							
6	23BCA705	Machine Learning Lab	0	0	2	1	Major Course Lab
7	23BCA706	Research Project/Dissertation				4	Research Project/Dissertation
	Total Practical		0	0	2	5/1	
	Total		15	0	2	18/16	

*Students not pursuing PR

*Students pursuing Honours will do 1 Courses of 4 Credits in lieu of Research Project in VII- Semester

#Students pursuing Honours with Research will do Research Methodology Course of 2 Credits & Research Project/Dissertation of 4 Credits

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DEGREE COURSE

PROGRAMME COURSES STRUCTURE SEMESTERWISE

SEMESTER-VIII

Sl.N o.	Course Code	Course Title	L	T	P	Credits	Course Category
Theory							
1	23BCA80 1	Big Data & Analytics	4	0	0	4	Major Course
2	23BCA80 2	Advanced Database Management System	4	0	0	4	Major Course
3	23BCA80 3	Advanced Web Technologies	4	0	0	4	Major Course
4	23BCA80 4	Advanced Java Programming	4	0	0	4	Major/Minor Course*
	Total Theory		16	0	0	12/16	
Practical							
5	23BCA80 5	Summer Internship*				4	Summer Internship*
6	23BCA80 6	Research Project/ Dissertation**	0	0	0	6	Research Project/Dissertation**
	Total Practical		0	0	0	6/4	
	Total		16	0	0	18/20	

*Students not pursuing PR

*Students pursuing Honours will do 1 course of 4 Credits & Summer Internship of 6 to 8 weeks in lieu of Research Project in VIII- Semester

**Students pursuing Honours would complete 12 Credits of Research/Dissertation

LIST OF SKILL ENHANCEMENT COURSES

Course Code	Course	Category	L	T	P	Credits
Soft Skill Courses						
23SS151	Effective Communication Skills	SEC	0	0	2	1
23SS252	Teamwork & Interpersonal Skills	SEC	0	0	2	1
23SS353	Presentation Skills	SEC	0	0	2	1
23SS454	Professional Skills	SEC	0	0	2	1
23SS555	Aptitude and Reasoning	SEC	0	0	2	1
Technical Training						
23SS101	Digital Literacy & IT Skills	SEC	0	0	2	1
23SS202	Advanced Excel Skills	SEC	0	0	2	1
23SS303	Statistical Skill with SPSS	SEC	0	0	2	1
23SS404	R language Programming	SEC	0	0	2	1
23SS505	Programming with MATLAB	SEC	0	0	2	1

LIST OF VALUE ADDED COURSES

Course Code	Course	Category	L	T	P	Credits
	Indian Constitution & Polity	VAC	2	0	0	2
	Environment Protection, Sustainable Development & Living	VAC	2	0	0	2
	AI & ML/DS&BDA/Drone Technology	VAC	2	0	0	2
	Sports, Yoga and Fitness	VAC	1	0	2	2

LIST OF MULTIDISCIPLINARY COURSES

S.No.	Course Name	L	T	P	Credits	Department
MDC-I	Basic Mathematics, Statistics & Computer Applications	2	0	2	3	Mathematics
	Statistics & Computer Applications	2	0	2	3	Mathematics

MDC-II	Chemistry in every daily life	3	0	0	3	Chemistry
	History of Physics	3	0	0	3	Physics
	Know Your Economy	3	0	0	3	Economics
MDC-III	Data Science of Emotions & Behaviour	3	0	0	3	Psychology
	Electoral Literacy in India	3	0	0	3	Political Science
	Basics of Sociology	3	0	0	3	Sociology