

BCA

Bachelor of Computer Application

(Honours with Research)

With Specialization in Cyber Security

Syllabus

2026-2030



SCHOOL OF
ENGINEERING & TECHNOLOGY
SUSHANT UNIVERSITY

Department of Computer Applications

School of Engineering & Technology, Sushant University

Gurugram Sector 55, 122003

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BCA HONOURS WITH RESEARCH (CYBER SECURITY)

Syllabus (1st Year_1st & 2nd Semester)

Year	Semester-1						
First Year	Course Code	Course Title	L	T	P	H	Credit
	SU131	Communication in English	1	0	2	3	2
	SE143	Introduction to Data Analytics	2	0	2	4	3
	SE151	Universal Human Values	2	0	0	2	2
	CA101	Fundamentals of Programming	2	0	4	6	4
		Multidisciplinary Course -1					3
	CA105	IT Workshop	0	0	2	2	1
	CA121	Computer Fundamentals	2	0	2	4	3
		Total Credits					18

Year	Semester-2						
First Year	Course Code	Course Title	L	T	P	H	Credit
	SU132	Environmental Studies	2	0	0	2	2
	CA142	Web Development-1	1	0	4	5	3
	CA154	Entrepreneurship	2	0	0	2	2
	CA152	Mathematics-I	3	0	2	5	4
	CA102	Data Structures	3	0	2	5	4
	CA104	Python for Problem Solving	2	0	4	6	4
	SE156	Sports and Yoga or NSS/NCC	0	0	2	2	1
	CA144	Design Thinking	1	0	2	3	2
		Multidisciplinary Course -2					3
		Total Credits					25

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Syllabus (2nd Year_3rd & 4th Semester)

Second Year	Semester-3						
	Course Code	Course Title	L	T	P	H	Credit
	CA153	Constitution of India	1	0	0	1	1
	CA241	Mathematics-II	3	0	2	5	4
	CA243	Statistics using Python	2	0	2	4	3
	CA210	Web Development-2	1	0	4	5	3
	CA205	Introduction to Database Systems	3	0	2	5	4
		Multidisciplinary Course -3					3
		Specialization Elective-I	2	0	2	4	3
		Total Credits					21

Second Year	Semester-4						
	Course Code	Course Title	L	T	P	H	Credit
	CA234	Professional Etiquettes	2	0	0	2	2
	CA204	Fundamentals of Computer Networks	3	0	2	5	4
	CA206	Operating Systems	3	0	2	5	4
	CA208	Object Oriented Programming	2	0	4	6	4
	CA203	Computer Architecture	3	0	0	3	3
		Specialization Elective-II	2	0	2	4	3
		Total Credits					20
		Summer Internship * - 8 weeks					

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Syllabus (3rd Year_5th & 6th Semester)

Third year	Semester-5						
	Course Code	Course Title	L	T	P	H	Credit
	CA215	Software Engineering	2	0	2	4	3
	CA495	Minor Project	0	0	14	14	7
	CA405	Artificial Intelligence	3	0	2	5	4
		Specialization Elective-III	2	0	2	4	3
	CA375	Internship	0	0	4	4	2
	Total Credits						19

Third year	Semester-6						
	Course Code	Course Title	L	T	P	H	Credit
	CA302	Blockchain Technology	3	0	2	5	4
	CA398	Major Project	0	0	24	24	12
		Specialization Elective-IV	2	0	2	4	3
		Specialization Elective-V	2	0	2	4	3
Total Credits						22	

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Syllabus (4th Year_7th & 8th Semester)

Semester - 7						
Fourth Year	CA401	Data Mining and data Ware housing				4
	CA402	Knowledge Representation and Graphs				4
		Specialization Elective-VI				3
		Specialization Elective-VII				3
		Specialization Elective-VIII				3
	Total Credits					

Semester-8						
Course Code	Course Title	L	T	P	H	Credit
	Research Project/Dissertation					20

Total no. of credit – 162

L = Lecture

T = Tutorial

P = Practical

H = Hours

C = Credits

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Electives List

ELECTIVES LIST BCA									
S.NO	Year	Semester	Elective	Specialisation	Subject Name	L	T	P	Credits
1	II	III	Specialization Elective-I	CYBER	Fundamentals of Cyber Security	2	0	2	3
2	II	IV	Specialization Elective-II	CYBER	Fundamentals of Cloud	2	0	2	3
3	III	V	Specialization Elective-III	CYBER	Cloud storage and virtualization	2	0	2	3
4	III	VI	Specialization Elective-IV	CYBER	Web Security	2	0	2	3
5	III	VI	Specialization Elective-V	CYBER	Cryptography	2	0	2	3
6	IV	VII	Specialization Elective-VI	CYBER	Network Security	2	0	2	3
7	IV	VII	Specialization Elective-VII	CYBER	Introduction to Ethical Hacking	2	0	2	3
8	IV	VII	Specialization Elective-VIII	CYBER	NoSQL databases	2	0	2	3

SET, SUSHANT