Department of CS&E and IT, JIIT Noida

2025 onwards Curriculum for B. Tech. in Computer Science & Engineering (Cyber Security)

Category – **BSC:** Basic Science Courses, **ESC:** Engineering Science Courses including Workshop, Drawing, etc., **HSC:** Humanities & Social Sciences including Management Courses, **PCC:** Professional Core Courses, **PEC:** Professional Elective Courses Relevant to Chosen Specialization/Branch, **OEC:** Open Subjects–Electives, **PRC:** Project Work, Seminar & Internship, **OMC:** Mandatory Courses

FIRST SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	BSC	15B11MA111	Mathematics-1	3	1	0	4	4
2	BSC	15B11PH111	Physics-1	3	1	0	4	4
3	BSC	15B17PH171	Physics Lab-1	0	0	2	2	1
4	ESC	15B11CI111	Software Development Fundamentals-I	3	1	0	4	4
5	ESC	24B15CS111	Software Development Fundamentals Lab-I	0	0	2	2	1
6	ESC	24B11EC111	Basic Electronics	3	1	0	4	4
7	ESC	24B15EC111	Basic Electronics Lab	0	0	2	2	1
8	HSC	15B11HS112	English	1	0	2	3	2
9	ESC	18B15GE112	Workshop	0	0	3	3	1.5
			Total				**28**	**22.5**

SECOND SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	BSC	15B11MA211	Mathematics-2	3	1	0	4	4
2	BSC	15B11PH211	Physics-2	3	1	0	4	4
3	BSC	15B17PH271	Physics Lab-2	0	0	2	2	1
4	ESC	15B11CI121	Software Development Fundamentals-II	3	1	0	4	4
5	ESC	24B15CS121	Software Development Fundamentals Lab-II	0	0	2	2	1
6	HSC	24B16HS111	Life Skills & Professional Communication Lab	0	0	2	2	Qualifying
7	ESC	18B15GE111	Engineering Drawing & Design	0	0	3	3	1.5
8	HSC	24B11HS111	Universal Human Values (UHV)	2	1	0	3	3
			Total				**24**	**18.5**

THIRD SEMESTER

S. No.	Category	Course Code	Course Title	L	T	P	Total	Credits
1	BSC	25B11MA213	Mathematical Foundations for Artificial Intelligence and Data Science	3	1	0	4	4
2	PCC	XXXXXXX	Software Engineering	3	0	0	3	3
3	PCC	XXXXXXX	Data Structures and Algorithms	3	1	0	4	4
4	PCC	XXXXXXX	Data Structures and Algorithms Lab	0	0	2	2	1
5	PCC	24B11CS213	Database Management Systems	3	0	0	3	3
6	PCC	24B15CS213	Database Management Systems Lab	0	0	2	2	1
7	PCC	24B15CS214	Unix Programming Lab	1	0	2	3	2
8	PCC	XXXXXXX	Python Lab	0	0	2	2	1
9	HSC	15B11HS211	Economics	2	1	0	3	3
10	PRC	24B17CS211	Summer Training-I (4 weeks)	0	0	0	0	2
			Total				26	24

FOURTH SEMESTER

S. No.	Category	Course Code	Course Title	L	T	P	Total	Credits
1	HSC	XXXXXXX	HSS Elective – 1	2	1	0	3	3
2	PCC	25B11EC311	Digital Systems and Computer Organisation	3	0	0	3	3
	PCC	25B15EC311	Digital Systems and Computer Organisation Lab	0	0	2	2	1
3	PCC	XXXXXXX	Computer Network	3	1	0	4	4
4	PCC	XXXXXXX	Computer Network Lab	0	0	2	2	1
5	PCC	24B11CS222	Artificial Intelligence and Machine Learning	3	0	0	3	3
6	PCC	24B15CS222	Artificial Intelligence and Machine Learning Lab	0	0	2	2	1
7	PCC	XXXXXXX	Introduction to Cryptography and its Applications	3	1	0	4	4
9	PCC	XXXXXXX	Information Security Lab	0	0	2	2	1
10	PEC	XXXXXXX	Discipline Elective – 1	2	0	0	2	2
11	PEC	XXXXXXX	Discipline Elective – 1 Lab	0	0	2	2	1
12	OMC	19B13BT211	Environmental Studies	3	0	0	3	Quali fying
			Total				32	24

FIFTH SEMESTER

S. No.	Category	Course Code	Course Title	L	T	P	Total	Credits
1	PCC	24B11CS312	Operating Systems	3	0	0	3	3
2	PCC	24B15CS312	Operating Systems Lab	0	0	2	2	1
3	PCC	XXXXXXX	Web Technology and Cyber Security	3	0	0	3	3
4	PCC	XXXXXXX	Web Technology and Cyber Security Lab	0	0	2	2	1
5	PCC	XXXXXXX	Computer and Network Security	1	0	2	3	2
6	PEC	XXXXXXX	Discipline Elective – 2	2	0	0	2	2
7	PEC	XXXXXXX	Discipline Elective – 2 Lab	0	0	2	2	1
8	PEC	XXXXXXX	Discipline Elective – 3	2	0	0	2	2
9	PEC	XXXXXXX	Discipline Elective – 3 Lab	0	0	2	2	1
10	BSC	XXXXXXX	Science Elective	3	0	0	3	3
11	OMC	18B12HS311	Indian Constitution & Traditional Knowledge	3	0	0	3	Quali fying
12	PRC	24B17CS311	Summer Training-II (6 weeks)	0	0	0	0	2
			Total				27	21

SIXTH SEMESTER

S. No.	Category	Course Code	Course Title	L	T	P	Total	Credits
1	PCC	XXXXXXX	Ethical Hacking and Prevention	3	0	0	3	3
2	PCC	XXXXXXX	Ethical Hacking and Prevention Lab	0	0	2	2	1
3	PCC	XXXXXXX	Introduction to Blockchain Technology	3	0	0	3	3
4	PCC	XXXXXXX	Blockchain Technology Lab	0	0	2	2	1
5	PCC	24B11CS323	Distributed and Cloud Computing	3	0	0	3	3
6	PEC	XXXXXXX	Discipline Elective – 4	3	0	0	3	3
7	PEC	XXXXXXX	Discipline Elective – 5	3	0	0	3	3
8	OEC	XXXXXXX	Open Elective – 1	2	0	0	2	2
9	Value Added	XXXXXXX	Selected Value Added Course	2	0	0	2	Audit
10	HSC	24B15HS311	Soft Skill For Employability	0	0	2	2	1
11	PRC	24B17CS312	Minor Project	0	0	4	4	2
			Total				29	22

SEVENTH SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	PEC	XXXXXXX	Discipline Elective – 6	3	0	0	3	3
2	OEC	XXXXXXX	Open Elective – 2	3	0	0	3	3
3	PRC	15B19CI791	Major Project Part – 1	0	0	0	8	4
4	PRC	24B17CS411	Summer Training - III (6 weeks)	0	0	0	0	4
			Total				**14**	**14**

EIGHTH SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	PEC	XXXXXXX	Discipline Elective –7	3	0	0	3	3
2	OEC	XXXXXXX	Open Elective –3	3	0	0	3	3
3	PRC	15B19CI891	Major Project Part –2	0	0	0	16	8
			Total				**22**	**14**

Total Program Credits: 22.5 + 18.5 + 24 + 24 + 21 + 22 + 14 + 14 = 160

**Proposed Course curricula will be presented in upcoming BoS of Dept. of CS&E and IT for approval

Department of CS&E and IT, JIIT Noida

Bucket Wise Tentative List of Discipline Electives (To be updated time to time)

Discipline Elective – 1 and Discipline Elective – 1 Lab (offered in 4th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	Mobile app development	2	0	0	2	2
2	XXXXXXX	Fundamentals of smart system and IoT	2	0	0	2	2
3	XXXXXXX	Quantum computing	2	0	0	2	2
4	XXXXXXX	DevOps and its Security	2	0	0	2	2
5	XXXXXXX	Mobile app development lab	0	0	2	2	1
6	XXXXXXX	Fundamentals of smart system and IoT lab	0	0	2	2	1
7	XXXXXXX	Quantum computing lab	0	0	2	2	1
8	XXXXXXX	DevOps and its Security lab	0	0	2	2	1

Discipline Elective – 2 and Discipline Elective – 2 Lab (offered in 5th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	IoT security	2	0	0	2	2
2	XXXXXXX	Cloud Security	2	0	0	2	2
3	XXXXXXX	Mobile application security	2	0	0	2	2
4	XXXXXXX	Quantum cryptography	2	0	0	2	2
5	XXXXXXX	IoT security lab	0	0	2	2	1
6	XXXXXXX	Mobile application security lab	0	0	2	2	1
7	XXXXXXX	Quantum cryptography lab	0	0	2	2	1
8	XXXXXXX	Cloud Security lab	0	0	2	2	1

Discipline Elective – 3 and Discipline Elective – 3 Lab (offered in 5th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	Data Analytics for Fraud Detection	2	0	0	2	2
2	XXXXXXX	Vulnerability Assessment & Penetration Testing	2	0	0	2	2
3	XXXXXXX	Security in software defined networks (SDNs)	2	0	0	2	2
4	XXXXXXX	Digital Watermarking and Steganography	2	0	0	2	2
5	XXXXXXX	Data Analytics for Fraud Detection lab	0	0	2	2	1
6	XXXXXXX	Vulnerability Assessment & Penetration Testing lab	0	0	2	2	1
7	XXXXXXX	Security in software defined networks (SDNs) lab	0	0	2	2	1
8	XXXXXXX	Digital Watermarking and Steganography lab	0	0	2	2	1

Discipline Elective – 4 (offered in 6th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	Cryptocurrency technology	3	0	0	3	3

2	XXXXXXX	Secure design of software systems	3	0	0	3	3
3	XXXXXXX	Digital forensic and cyber laws	3	0	0	3	3
4	XXXXXXX	Theory of computation	3	0	0	3	3

Discipline Elective – 5 (offered in 6th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	AI in Cyber Defense	3	0	0	3	3
2	XXXXXXX	Malware Analysis and Mitigation Techniques	3	0	0	3	3
3	XXXXXXX	Compiler design	3	0	0	3	3
4	XXXXXXX	Augmented Reality and Virtual Reality	3	0	0	3	3

Discipline Elective – 6 (offered in 7th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	Machine learning and Natural language processing	3	0	0	3	3
2	XXXXXXX	Risk Assessment and Security Policies	3	0	0	3	3
3	XXXXXXX	Security of E-Systems	3	0	0	3	3
4	XXXXXXX	Fog and Edge Security	3	0	0	3	3

Discipline Elective – 7 (offered in 8th Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXX	Big data visualization	3	0	0	3	3
2	XXXXXXX	Large scale database systems	3	0	0	3	3
3	XXXXXXX	Privacy and Security in Online Social media	3	0	0	3	3
4	XXXXXXX	Enterprise Security	3	0	0	3	3