

## Department of CS&E and IT, IIIT 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
<b>Total</b>							<b>28</b>	<b>22.5</b>

#### 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
<b>Total</b>							<b>24</b>	<b>18.5</b>

### THIRD SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	BSC	25B11MA213	Mathematical Foundations for Artificial Intelligence and Data Science	3	1	0	4	4
2	PCC	XXXXXXXX	Software Engineering	3	0	0	3	3
3	PCC	XXXXXXXX	Data Structures and Algorithms	3	1	0	4	4
4	PCC	XXXXXXXX	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	XXXXXXXX	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
<b>Total</b>							<b>26</b>	<b>24</b>

### FOURTH SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	HSC	XXXXXXXX	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	XXXXXXXX	Computer Network	3	1	0	4	4
4	PCC	XXXXXXXX	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	XXXXXXXX	Introduction to Cryptography and its Applications	3	1	0	4	4
9	PCC	XXXXXXXX	Information Security Lab	0	0	2	2	1
10	PEC	XXXXXXXX	Discipline Elective – 1	2	0	0	2	2
11	PEC	XXXXXXXX	Discipline Elective – 1 Lab	0	0	2	2	1
12	OMC	19B13BT211	Environmental Studies	3	0	0	3	Qualifying
<b>Total</b>							<b>32</b>	<b>24</b>

## FIFTH SEMESTER

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

## SIXTH SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	PCC	XXXXXXXX	Ethical Hacking and Prevention	3	0	0	3	3
2	PCC	XXXXXXXX	Ethical Hacking and Prevention Lab	0	0	2	2	1
3	PCC	XXXXXXXX	Introduction to Blockchain Technology	3	0	0	3	3
4	PCC	XXXXXXXX	Blockchain Technology Lab	0	0	2	2	1
5	PCC	24B11CS323	Distributed and Cloud Computing	3	0	0	3	3
6	PEC	XXXXXXXX	Discipline Elective – 4	3	0	0	3	3
7	PEC	XXXXXXXX	Discipline Elective – 5	3	0	0	3	3
8	OEC	XXXXXXXX	Open Elective – 1	2	0	0	2	2
9	Value Added	XXXXXXXX	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
<b>Total</b>							<b>29</b>	<b>22</b>

## SEVENTH SEMESTER

S. No.	Course			Contact Hours				Credits
	Category	Course Code	Course Title	L	T	P	Total	
1	PEC	XXXXXXXX	Discipline Elective – 6	3	0	0	3	3
2	OEC	XXXXXXXX	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
<b>Total</b>							<b>14</b>	<b>14</b>

## EIGHTH SEMESTER

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

**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, IIIT Noida

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

#### Discipline Elective – 1 and Discipline Elective – 1 Lab (offered in 4<sup>th</sup> Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXXX	Mobile App Development	2	0	0	2	2
2	XXXXXXXX	Fundamentals of Smart System and IoT	2	0	0	2	2
3	XXXXXXXX	Quantum Computing	2	0	0	2	2
4	XXXXXXXX	DevOps and its Security	2	0	0	2	2
5	XXXXXXXX	Mobile App Development Lab	0	0	2	2	1
6	XXXXXXXX	Fundamentals of Smart System and IoT Lab	0	0	2	2	1
7	XXXXXXXX	Quantum Computing Lab	0	0	2	2	1
8	XXXXXXXX	DevOps and its Security Lab	0	0	2	2	1

#### Discipline Elective – 2 and Discipline Elective – 2 Lab (offered in 5<sup>th</sup> Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXXX	IoT Security	2	0	0	2	2
2	XXXXXXXX	Cloud Security	2	0	0	2	2
3	XXXXXXXX	Mobile Application Security	2	0	0	2	2
4	XXXXXXXX	Quantum Cryptography	2	0	0	2	2
5	XXXXXXXX	IoT Security Lab	0	0	2	2	1
6	XXXXXXXX	Mobile Application Security Lab	0	0	2	2	1
7	XXXXXXXX	Quantum Cryptography Lab	0	0	2	2	1
8	XXXXXXXX	Cloud Security Lab	0	0	2	2	1

#### Discipline Elective – 3 and Discipline Elective – 3 Lab (offered in 5<sup>th</sup> Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXXX	Data Analytics for Fraud Detection	2	0	0	2	2
2	XXXXXXXX	Vulnerability Assessment & Penetration Testing	2	0	0	2	2
3	XXXXXXXX	Security in Software Defined Networks (SDNs)	2	0	0	2	2
4	XXXXXXXX	Digital Watermarking and Steganography	2	0	0	2	2
5	XXXXXXXX	Data Analytics for Fraud Detection Lab	0	0	2	2	1
6	XXXXXXXX	Vulnerability Assessment & Penetration Testing Lab	0	0	2	2	1
7	XXXXXXXX	Security in Software Defined Networks (SDNs) Lab	0	0	2	2	1
8	XXXXXXXX	Digital Watermarking and Steganography Lab	0	0	2	2	1

#### Discipline Elective – 4 (offered in 6<sup>th</sup> Semester)

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXXX	Cryptocurrency Technology	3	0	0	3	3
2	XXXXXXXX	Secure Design of Software Systems	3	0	0	3	3
3	XXXXXXXX	Digital Forensic and Cyber Laws	3	0	0	3	3
4	XXXXXXXX	Theory of Computation	3	0	0	3	3

**Discipline Elective – 5 (offered in 6<sup>th</sup> Semester)**

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

**Discipline Elective – 6 (offered in 7<sup>th</sup> Semester)**

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXXX	Machine Learning and Natural Language Processing	3	0	0	3	3
2	XXXXXXXX	Risk Assessment and Security Policies	3	0	0	3	3
3	XXXXXXXX	Security of E-Systems	3	0	0	3	3
4	XXXXXXXX	Fog and Edge Security	3	0	0	3	3

**Discipline Elective – 7 (offered in 8<sup>th</sup> Semester)**

S. No.	Course Code	Course Title	L	T	P	Total	Credits
1	XXXXXXXX	Big Data Visualization	3	0	0	3	3
2	XXXXXXXX	Large Scale Database Systems	3	0	0	3	3
3	XXXXXXXX	Privacy and Security in Online Social Media	3	0	0	3	3
4	XXXXXXXX	Enterprise Security	3	0	0	3	3