

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
COURSE STRUCTURE & SYLLABUS (R25 Regulations)
Applicable from AY 2025-26 Batch

B.Tech. CSE (Cyber Security)

I Year I Semester (25 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Matrices and Calculus	3	1	0	4
2	BSC	Advanced Engineering Physics	3	0	0	3
3	MEC	Engineering Graphics and Computer Aided Drafting	2	0	2	3
4		Basic Electrical Engineering	3	0	0	3
5	CSC	Programming for Problem Solving	3	0	0	3
6	BSC	Advanced Engineering Physics Lab	0	0	2	1
7	CSC	Programming for Problem Solving Lab	0	0	2	1
8		Python Programming Lab	0	0	2	1
9	HSC	Basic Electrical Engineering Lab	0	0	2	1
10		Induction Program				
		Total Credits	14	1	10	20

I Year II Semester (25 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Ordinary Differential Equations and Vector Calculus	3	0	0	3
2	BSC	Engineering Chemistry	3	0	0	3
3	HSC	English for Skill Enhancement	3	0	0	3
4		Electronic Devices and Circuits	3	0	0	3
5		Data Structures	3	0	0	3
6	BSC	Engineering Chemistry Lab	0	0	2	1
7		Data Structures Lab	0	0	2	1
8	HSC	English Language and Communication Skills Lab	0	0	2	1
9	MEC	Engineering Workshop	0	0	2	1
10		IT Workshop	0	0	2	1
		Total Credits	15	0	10	20

II YEAR I SEMESTER (25 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Mathematical and Statistical Foundation	3	0	0	3
2		Software Engineering	3	0	0	3
3		Database Management Systems	3	0	0	3
4		Computer Organization	3	0	0	3
5		Java Programming	3	0	0	3
6		Computational Mathematics Laboratory	0	0	2	1
7		Software Engineering Laboratory	0	0	2	1
8		Database Management Systems Laboratory	0	0	2	1
9		Java Programming Laboratory	0	0	2	1
10	SDC	Data Visualization-R Programming/Power BI/ Tableau/Google Chart	0	0	2	1
		Total Credits	15	0	10	20

II YEAR II SEMESTER (26 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1		Discrete Mathematics	3	0	0	3
2		Formal Languages and Automata Theory	3	0	0	3
3		Computer Networks	3	0	0	3
4		Operating Systems	3	0	0	3
5		Mathematical Foundations of Cryptography	3	0	0	3
6		Innovation and Entrepreneurship	2	0	0	2
7		Computer Networks Laboratory	0	0	2	1
8		Operating Systems Laboratory	0	0	2	1
9		Mathematical Foundations of Cryptography Laboratory	0	0	2	1
10	SDC	Node JS/ React JS/ Django, UI Design - Flutter	0	0	2	1
11	*MC	Indian Knowledge System	1	0	0	1
		Total Credits	18	0	08	22

III YEAR I SEMESTER (27 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1		Information Security	3	0	0	3
2		Network Management Systems and Operations	3	0	0	3
3		Algorithm Design and Analysis	3	0	0	3
4		Professional Elective-I	3	0	0	3
5		Open Elective-I	2	0	0	2
6		Information Security Laboratory	0	0	2	1
7		Network Management Systems and Operations Laboratory	0	0	2	1
8		Algorithm Design and Analysis Laboratory	0	0	2	1
9		Field Based Project/ Internship	0	0	4	2
10	SDC	Full Stack Development	0	0	2	1
11	MC*	Gender Sensitization* & Human Values and Professional Ethics *	1	0	0	1
		Total Credits	15	0	12	21

***Note: For the courses Gender Sensitization and Human Values and Professional Ethics** - one hour of instruction will be conducted on alternate weeks. For example, if a one-hour class for Gender Sensitization is conducted this week, then a one-hour class for Human Values and Professional Ethics will be conducted in the following week.

III YEAR II SEMESTER (25 Hours)

S. No	Course Code	Course Title	L	T	P	Credits
1		Cyber Security Essentials	3	0	0	3
2		Secure Coding Practices	3	0	0	3
3		Business Economics and Financial Analysis	3	0	0	3
4		Professional Elective-II	3	0	0	3
5		Open Elective-II	2	0	0	2
6		Cyber Security Essentials Laboratory	0	0	2	1
7		Secure Coding Practices Laboratory	0	0	2	1
8		Development and Operations (DevOps) Laboratory	0	0	2	1
9	HSC	English for Employability Skills Lab	0	0	2	1

10	SDC	Cyber Defense Techniques	0	0	2	1
11	MC	Environmental Science	1	0	0	1
		Total Credits	15	0	10	20

IV YEAR I SEMESTER (25 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1		Vulnerability Assessment & Penetration Testing	3	0	0	3
2		Cyber Crime Investigation & Digital Forensics	3	0	0	3
3		Fundamentals of Management	3	0	0	3
4		Professional Elective-III	3	0	0	3
5		Professional Elective-IV	3	0	0	3
6		Open Elective – III	2	0	0	2
7		Vulnerability Assessment & Penetration Testing Laboratory	0	0	2	1
8		Cyber Crime Investigation & Digital Forensics Laboratory	0	0	2	1
9		Industry Oriented Mini Project/ Summer Internship	0	0	4	2
		Total Credits	17	0	08	21

IV YEAR II SEMESTER (34 Hours)

S. No.	Course Code	Course Title	L	T	P	Credits
1		Professional Elective – V	3	0	0	3
2		Professional Elective – VI	3	0	0	3
3		Project Work	0	0	28	14
		Total Credits	6	0	28	20

Professional Electives

	Professional Elective - I	Professional Elective - II	Professional Elective-III	Professional Elective-IV	Professional Elective-V	Professional Elective-VI
1	Artificial Intelligence	Machine Learning	Artificial Intelligence in Cyber Security	Security Incident & Response Management (SOC)	Deep Learning	Digital Watermarking and Steganography
2	Web Programming	Data Science	Cyber Laws	Authentication Techniques	Blockchain Technology	Social Media Security
3	Data Warehousing and Business Intelligence	Information Retrieval Systems	Privacy Preserving in Data Mining	Quantum Computing	Information Storage Management	Quantum Cryptography
4	Cloud Computing	Ad-hoc & Sensor Networks	Security in Computing	Information System Audit & Assurance	Cloud Security	Green Computing
5	Mobile Application Development	Mobile Application Security	Malware Analysis	Web & Database Security	Data Analytics for Fraud Detection	Data Privacy

OPEN ELECTIVES**Open Elective-I:**

1	Cyber Security
2	Mathematics for Machine Learning

Open Elective-II:

1	Information System Audit & Assurance
2	Social Media Security

Open Elective-III:

1	Data Privacy
2	Security Incident & Response Management (SOC)