JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURJADA VZM
VIZIANAGARAM – 535 003, Andhra Pradesh, India

B. Tech CSE (Cyber Security)

(R23-COURSE STRUCTURE)

(Applicable from the academic year 2023-24 and onwards)

B.Tech.– I Year I Semester

S. No.	Course Code	Course Name	L	T	P	Credits
1.	R23BS01	Linear Algebra & Calculus	3	0	0	3
2.	R23BS03	Engineering Physics	3	0	0	3
3.	R23HS01	Communicative English	2	0	0	2
4.	R23ES01	Basic Civil &Mechanical Engineering	3	0	0	3
5.	R23ES07	Introduction to Programming	3	0	0	3
6.	R23HS01	Communicative English Lab	0	0	2	1
7.	R23BS03	Engineering Physics Lab	0	0	2	1
8.	R23ES02	Engineering Workshop	0	0	3	1.5
9.	R23ES06	IT Workshop	0	0	2	1
10.	R23ES07	Computer Programming Lab	0	0	3	1.5
11.	R23MC01	Health and Wellness, Yoga and Sports	0	0	1	0.5
		Total				**20.5**

B.Tech.– I Year II Semester

S.No.	Course Code	Course Name	L	T	P	Credits
1.	R23BS02	Differential Equations and Vector calculus	3	0	0	3
2.	R23BS05	Chemistry	3	0	0	3
3.	R23ES03	Engineering Graphics	1	0	4	3
4.	R23ES04	Basic Electrical & Electronics Engineering	3	0	0	3
5.	R23PC04	Data Structures	3	0	0	3
6.	R23BS05	Chemistry Lab	0	0	2	1
7.	R23ES05	Electrical & Electronics Engineering workshop	0	0	3	1.5
8.	R23PC04	Data Structures Lab	0	0	3	1.5
9.	R23MC02	NSS/NCC/Scouts &Guides/Community Service	0	0	1	0.5
		Total				**19.5**

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B.Tech.– II Year I Semester

S. No.	Category	Title	L	T	P	Credits
1	BS	Discrete Mathematics & Graph Theory	3	0	0	3
2	HSMC	Universal Human Values – Understanding Harmony & Human Ethical Conduct	2	1	0	3
3	Engineering Science	Digital Logic & Computer Organization	3	0	0	3
4	Professional Core	Advanced Data Structures & Algorithm Analysis	3	0	0	3
5	Professional Core	Object Oriented Programming Through Java	3	0	0	3
6	Professional Core	Advanced Data Structures and Algorithm Analysis Lab	0	0	3	1.5
7	Professional Core	Object Oriented Programming Through Java Lab	0	0	3	1.5
8	Skill Enhancement course	Python programming	0	1	2	2
9	Audit Course	Environmental Science	2	0	0	-
Total			**15**	**2**	**10**	**20**

B.Tech.– II Year II Semester

S.No.	Category	Title	L	T	P	Credits
1	Management Course- I	Managerial Economics and Financial Analysis	2	0	0	2
2	Basic Science	Number Theory & Applications	3	0	0	3
3	Professional Core	Operating Systems	3	0	0	3
4	Professional Core	Database Management Systems	3	0	0	3
5	Professional Core	Computer Networks	3	0	0	3
6	Professional Core	Computer Networks Lab	0	0	3	1.5
7	Professional Core	Database Management Systems Lab	0	0	3	1.5
9	Skill Enhancement Course	Full Stack Development-1	0	1	2	2
10	ES	Design Thinking & Innovation	1	0	2	2
Total			**15**	**1**	**12**	**21**
Mandatory Community Service Project Internship of 08 weeks duration during summer vacation						

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B.Tech. – III Year I Semester

S.No.	Category	Title	L	T	P	Credits
1	Professional Core	Cloud Computing	3	0	0	3
2	Professional Core	Introduction to Cyber Security	3	0	0	3
3	Professional Core	Automata Theory & Compiler Design	3	0	0	3
3	Professional Elective-I	1. Software Engineering 2. Wireless Sensor Networks 3. Microprocessors & Microcontrollers 4. Artificial Intelligence 5. 12-week MOOC Swayam/NPTEL course recommended by the BoS	3	0	0	3
4	Open Elective- I	**Open elective offered by other department**	3	0	0	3
6	Professional Core	Cloud Computing Lab	0	0	3	1.5
7	Professional Core	Cyber Security Lab	0	0	3	1.5
8	Skill Enhancement course	SaleForce	0	1	2	2
9	Engineering Science	Tinkering Lab	0	0	2	1
10	Evaluation of Community Service Internship		-	-	-	2
		Total	14	1	10	23

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(Applicable from the academic year 2023-24 and onwards)

B.Tech.– III Year II Semester

S.No.	Category	Title	L	T	P	Credits
1	Professional Core	Cyber Crimes & Digital Forensics	3	0	0	3
2	Professional Core	Cryptography & Network Security	3	0	0	3
3	Professional Core	Machine Learning	3	0	0	3
4	Professional Elective-II	1. Software Testing Methodologies 2. DevOps 3. Internet of Things 4. Applied Cryptography 5. 12-week MOOC Swayam/NPTEL course recommended by the BoS	3	0	0	3
5	Professional Elective-III	1. Software Project Management 2. Mobile Adhoc Networks 3. Natural Language Processing 4. Security Assessment and Risk Analysis 5. 12-week MOOC Swayam/NPTEL course recommended by the BoS	3	0	0	3
6	Open Elective – II	**Open elective offered by other department**	3	0	0	3
7	Professional Core	Cryptography & Network Security Lab	0	0	3	1.5
8	Professional Core	Cyber Crimes & Digital Forensics Lab	0	0	3	1.5
9	Skill Enhancement course	Soft skills	0	1	2	2
10	Audit Course-2	Technical Paper Writing & IPR	2	0	0	-
Total			**19**	**1**	**06**	**23**
Mandatory Industry Internship of 08 weeks duration during summer vacation						

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(Applicable from the academic year 2023-24 and onwards)

B.Tech. – IV Year I Semester

S.No.	Category	Title	L	T	P	Credits
1	Professional Core	Block chain Technology	3	0	0	3
2	Management Course- II	Human Resource Management	2	0	0	2
3	Professional Elective-IV	1. Software Architecture & Design Patterns 2. Network Management Systems and Operations 3. Deep Learning 4. Malware Analysis & Reverse Engineering 5. 12 week MOOC Swayam/NPTEL course recommended by the BoS	3	0	0	3
4	Professional Elective-V	1. Computer Graphics 2. Intrusion Detection and Prevention System 3. Metaverse 4. Cyber Laws and Security Policies 5. 12 week MOOC Swayam/NPTEL course recommended by the BoS	3	0	0	3
5	Open Elective-III	**Open elective offered by other department**	3	0	0	3
6	Open Elective-IV	**Open elective offered by other department**				3
7	Skill Enhancement Course	Ethical Hacking	0	1	2	2
8	Audit Course-3	Gender Sensitization	2	0	0	-
9	Internship	Evaluation of Industry Internship	-	-	-	2
		Total	**19**	**1**	**06**	**21**

B.Tech.– IV Year II Semester

S.No.	Category	Title	L	T	P	Credits
1	Internship & Project Work	Full semester Internship & Project Work	0	0	24	12

B. Tech CSE (Cyber Security)

(R23-COURSE STRUCTURE)

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OPEN ELECTIVES OFFERED BY CSE (CYBER SECURITY) TO OTHER BRANCHES:

OPEN ELECTIVE -I	OPEN ELECTIVE -II
1. Introduction to Artificial Intelligence 2. Ethical hacking 3. Exploratory Data Analysis with Python	1. Fundamentals of Data Base Management System 2. Data encryption and network security 3. AI Chabot
OPEN ELECTIVE -III	**OPEN ELECTIVE -IV**
1. Introduction to Cyber Security 2. Digital forensics 3. Social Media Analytics	1. Internet of Things 2. Data Wrangling and Pre-processing 3. Fundamentals of Cloud Computing