

# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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**PERIYAR  
MANIAMMAI**  
INSTITUTE OF SCIENCE & TECHNOLOGY  
(Deemed to be University)  
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited  
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## FACULTY OF ENGINEERING AND TECHNOLOGY

### B.TECH. COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)

#### CURRICULUM (I – VIII SEMESTERS) Regulation 2024

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**SEMESTER I**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24EN101	Technical English	3	0	0	3
2	U24MA101	Matrices and Differential Calculus	3	1	0	4
3	U24PH101	Engineering Physics	3	0	0	3
4	U24GE101	Principles of Engineering	3	0	0	3
5	U24GE102	Biology for Engineers	3	0	0	3
6	U24EM101	Coding Techniques	3	0	0	3
<b>Practical</b>						
7	U24MA102	Mathematics Laboratory	0	0	2	1
8	U24PH102	Engineering Physics Laboratory	0	0	2	1
9	U24EM102	Coding Techniques Laboratory	0	0	2	1
Total			18	1	6	22

## SEMESTER II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24EN151	Technical Communication Skill Development	2	0	2	3
2	U24MA151	Vector Calculus and Laplace Transforms	3	1	0	4
3	U24CH151	Engineering Chemistry	3	0	0	3
4	U24GE151	Design Thinking	3	0	0	3
5	U24GE152	Engineering Graphics	2	1	0	3
6	U24EM151	Programming in Practice	3	0	0	3
<b>Practical</b>						
7	U24CH152	Engineering Chemistry Laboratory	0	0	2	1
8	U24GE153	Design Thinking Laboratory	0	0	4	2
9	U24GE154	Engineering Practices	0	0	2	1
10	U24EM152	Programming in Practice Laboratory	0	0	2	1
Total			16	2	12	24

**SEMESTER III**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24MA201	Multivariate Calculus and Linear Algebra	3	1	0	4
2	U24SH201	Universal Human Values	2	1	0	3
3	U24CC201	Data Structures	3	0	0	3
4	U24CC202	Digital System Design	3	0	0	3
5	U24CC203	Computer Architecture	3	0	0	3
6	U24CC204	Database Management Systems	3	0	0	3
<b>Practical</b>						
7	U24CC205	Data Structures Laboratory	0	0	4	2
8	U24CC206	Digital System Design Laboratory	0	0	2	1
9	U24CC207	Database Management Systems Laboratory	0	0	4	2
<b>Audit Course</b>						
10	U24AUXXX	Audit Course - I	-	-	-	-
Total			17	2	10	24

**SEMESTER IV**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24MA251	Discrete Mathematics	3	1	0	4
2	U24CC251	Introduction to Cyber Security	3	0	0	3
3	U24CC252	Time Complexity and Analysis of Algorithms	3	0	0	3
4	U24CC253	Operating Systems	3	0	0	3
5	U24CC254	Software Engineering	3	0	0	3
6	U24CC751	Ancient Indian Innovations in Computer Technology	3	0	0	3
<b>Practical</b>						
7	U24CC255	Algorithmics Laboratory	0	0	4	2
8	U24CC256	Operating Systems Laboratory	0	0	2	1
9	U24EM2XX	Internship / Practical Training / Value Added Course(s)	2	0	2	3
<b>Audit Course</b>						
10	U24AUXXX	Audit Course – II	-	-	-	-
Total			20	1	8	25

**SEMESTER V**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CC301	Cryptography and Encryption	3	0	0	3
2	U24CC302	Data Communication and Networks	3	0	0	3
3	U24CC303	Compiler Design	3	0	0	3
4	U24CC7XX	Open Elective – II	3	0	0	3
5	U24CC9XX	Professional Elective - I	3	0	0	3
6	U24CC9XX	Professional Elective - II	3	0	0	3
<b>Practical</b>						
7	U24CC304	Computer Networks Laboratory	0	0	2	1
8	U24CC305	Compiler Design Laboratory	0	0	4	2
9	U24EM301	Value Added Course – Community Engagement and Social Responsibility	1	0	2	2
<b>Audit Course</b>						
10	U24AUXXX	Audit Course – III	-	-	-	-
Total			19	0	8	23

**SEMESTER VI**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24MA351	Mathematical Foundation for Data Analytics	3	0	0	3
2	U24CC351	Network Security Fundamentals	3	0	0	3
3	U24CC352	Cyber Forensics and Digital Investigation	3	0	0	3
4	U24CC7XX	Open Elective – III	3	0	0	3
5	U24CC9XX	Professional Elective - III	3	0	0	3
6	U24CC9XX	Professional Elective - IV	3	0	0	3
7	U24CC8XX	Online Course – I	3	0	0	3
<b>Practical</b>						
8	U24MA352	Computational Statistics Laboratory	0	0	4	2
9	U24EM3XX	Skill Development / Value Added Course(s)	1	0	2	2
<b>Audit Course</b>						
10	U24AUXXX	Audit Course – IV	-	-	-	-
Total			22	0	6	25

**SEMESTER VII**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24GE401	Professional Ethics	3	0	0	3
2	U24CC401	Machine Learning in Cyber Security	3	0	0	3
3	U24CC402	Cloud Computing and Virtualization Fundamentals	3	0	0	3
4	U24CC403	Vulnerability Assessment and Penetration Testing	3	0	0	3
5	U24CC9XX	Professional Elective - V	3	0	0	3
6	U24CC9XX	Professional Elective - VI	3	0	0	3
<b>Practical</b>						
7	U24CC404	Cyber Security Analytics Laboratory	0	0	2	1
8	U24CC405	Cloud Computing Laboratory	0	0	4	2
9	U24CC406	Vulnerability Assessment and Penetration Testing Laboratory	0	0	2	1
10	U24EM401	Project Phase – I	0	0	8	4
Total			18	0	16	26

## SEMESTER VIII

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
<b>Theory</b>						
1	U24CC8XX	Online Course – II	3	0	0	3
<b>Practical</b>						
2	U24EM451	Project Phase – II	0	0	16	8
Total			3	0	16	11

## Suggested List of Professional Elective Courses

### Professional Elective - I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CC901	Advanced Python Programming	3	0	0	3
2	U24CC902	Software Testing and Automation	3	0	0	3
3	U24CC903	Security Governance and Compliance	3	0	0	3
4	U24CC904	Computer Security and Audit Assurance	3	0	0	3
5	U24CC905	Digital Image Processing	3	0	0	3

### Professional Elective - II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CC906	Web Data Mining	3	0	0	3
2	U24CC907	Data Warehousing and Mining	3	0	0	3
3	U24CC908	Threat Intelligence and Incident Response	3	0	0	3
4	U24CC909	Web Application Security	3	0	0	3
5	U24CC910	Distributed Systems	3	0	0	3

### Professional Elective - III

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CC951	Unix Internals	3	0	0	3
2	U24CC952	Digital Watermarking and Steganography	3	0	0	3
3	U24CC953	Cloud Security	3	0	0	3
4	U24CC954	Wireless Sensor Networks	3	0	0	3
5	U24CC955	Natural Language Processing	3	0	0	3

**Professional Elective - IV**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CC956	Firewall Configuration and Management	3	0	0	3
2	U24CC957	Mobile Communication	3	0	0	3
3	U24CC958	Neural Networks	3	0	0	3
4	U24CC959	Social Media Analytics	3	0	0	3
5	U24CC960	Human Computer Interaction	3	0	0	3

**Professional Elective - V**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CC911	Ethical Hacking and Malware Analysis	3	0	0	3
2	U24CC912	Deep Learning Techniques	3	0	0	3
3	U24CC913	Network Intrusion Detection and Prevention	3	0	0	3
4	U24CC914	Prompt Engineering	3	0	0	3
5	U24CC915	Robotics and Intelligent Systems	3	0	0	3

**Professional Elective - VI**

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24CC916	Secure Coding Practices	3	0	0	3
2	U24CC917	Immersive Technologies	3	0	0	3
3	U24CC918	Machine Learning Operations	3	0	0	3
4	U24CC919	Generative AI Models	3	0	0	3
5	U24CC920	Cyber Physical Systems	3	0	0	3