



## Bachelor of Technology (B. Tech.) in Computer Science and Engineering (CSE) with Specialization (Hons.) in Cyber Security & Forensics

### Course Structure

#### First Year Semester - I

S. No	Course Title	L	T	P	Contact Hrs/wk	Credits
1.	Engineering Mathematics-I	3	1	0	4	4
2.	Applied Science	3	0	0	3	3
3.	Introduction to Programming /Electrical and Electronics Technology	3	0	0	3	3
4.	HSSM –I (English Communication-I)	3	0	0	3	3
5.	HSSM –II (Human Values & Ethics and Psychology) / Life Sciences	3	0	0	3	3
6.	Applied Science Lab	0	0	3	3	2
7.	Programming Lab/ Electrical and Electronics Technology Lab	0	0	3	3	2
8.	Engineering Drawing and CAD/ Engineering Workshop	0	0	3	3	2
9.	Communication and Collaboration Skill -I	0	0	2	2	1
10.	Avant Grade Project-I	0	0	2	2	1

#### Semester - II

S No	Course Title	L	T	P	Contact Hrs/wk	Credits
1.	Engineering Mathematics– II	3	1	0	4	4
2.	Electrical and Electronics Technology / Introduction to Programming	3	0	0	3	3
3.	Life Sciences/ (Human Values & Ethics and Psychology)	3	0	0	3	3
4.	Engineering Mechanics	3	1	0	4	4
5.	Environmental Science	3	0	0	3	3
6.	Electrical and Electronics Technology Lab / Programming Lab	0	0	3	3	2
7.	Engineering Workshop/ Engineering Drawing and CAD	0	0	3	3	2

8.	Communication and Collaboration Skill -II	0	0	2	2	1
9.	Avant Grade Project-II	0	0	2	2	1

**Total Credit (First Year): 47**

**Second Year**  
**Semester – III**

S. No	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Probability, Statistics and Numerical Methods	3	1	0	4	4
2.	Engineering Science Course	3	0	0	3	3
3.	HSSM –IV (Economics for Engineers)	3	0	0	3	3
4.	Data Structures and Algorithms (Prof. Core- I)	3	0	0	3	3
5.	Switching Circuits and Logic Design (Prof. Core- II)	3	0	0	3	3
6.	Formal Languages and Automata Theory (Prof. Core- III)	3	0	0	3	3
7.	Data Structures and Algorithms Lab (Prof. Core-I Lab)	0	0	3	3	2
8.	Interdisciplinary Project AU	1	0	2	3	3
9.	Design Thinking-I	0	0	3	3	2
10.	Avant Grade Project-III	0	0	2	2	1
11.	#Adamas Foundation (CSR Activity)	--	--	-	--	1

**Semester – IV**

S. No	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Operations Research	3	0	0	3	3
2.	Design & Analysis of Algorithm (Prof. Core- IV)	3	0	0	3	3
3.	Object Oriented Programming (Prof. Core- V)	3	0	0	3	3
4.	Software Engineering (Prof. Core- VI)	3	0	0	3	3
5.	Computer Architecture (Prof. Core- VII)	3	0	0	3	3
6.	Numerical Techniques Lab	0	0	3	3	2

7.	Design & Analysis of Algorithm Lab (Prof. Core- IV Lab)	0	0	3	3	2
8.	Object Oriented Programming Lab (Prof. Core- V Lab)	0	0	3	3	2
9.	Design Thinking-II	0	0	3	3	2
10.	Avant Grade Project-IV	0	0	2	2	1

**Total Credit (Second Year): 52**

**Third Year**  
**Semester – V**

S. No	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Compiler Design (Prof. Core- VIII)	3	0	0	3	3
2.	Database Management Systems (Prof. Core- IX)	3	0	0	3	3
3.	Operating Systems (Prof. Core- X)	3	0	0	3	3
4.	IT Application & Data Security	3	1	0	4	4
5.	Prof. Elective- I	3	0	0	3	3
6.	Compiler Design Lab (Prof. Core- VIII Lab)	0	0	3	3	2
7.	Database Management Systems Lab (Prof. Core- IX Lab)	0	0	3	3	2
8.	Operating Systems Lab (Prof. Core- X Lab)	0	0	3	3	2
9.	IT Application & Data Security Lab	0	0	3	3	2
10.	Venture Ideation	0	0	2	2	1
11.	Avant Grade Project-V	0	0	2	2	1

**Semester – VI**

S. No	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Computer Networks (Prof. Core- XI)	3	0	0	3	3
2.	Artificial Intelligence and Machine Learning (Prof. Core- XII)	3	0	0	3	3
3.	Prof. Elective- II	3	0	0	3	3
4.	Open Elective- I	2	0	0	2	2
5.	IT Security	3	1	0	4	4

6.	Information Security Governance	3	0	0	3	3
7.	Computer Networks Lab (Prof. Core- XI Lab)	0	0	3	3	2
8.	Artificial Intelligence and Machine Learning Lab (Prof. Core- XII Lab)	0	0	3	3	2
9.	Prof. Elective- II Lab	0	0	3	3	2
10.	IT Security Lab	0	0	3	3	2

**Total Credit (Third Year): 52**

**Fourth Year**  
**Semester - VII**

S. No	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	HSSM –V (Industrial Management)	3	0	0	3	3
2.	Prof. Elective- III	3	0	0	3	3
3.	Prof. Elective- IV	3	0	0	3	3
4.	Open Elective- II	3	0	0	3	3
5.	Open Elective- III	3	0	0	3	3
6.	Hacking & Penetration Testing	3	0	0	3	3
7.	Prof. Elective- IV Lab	0	0	3	3	2
8.	Hacking & Penetration Testing Lab	0	0	3	3	2
9.	#Summer Internship	--	--	--	--	2
10.	Minor Project	0	0	6	6	3

# Summer Internship for 30 days will be taken at the end of 6<sup>th</sup> semester, and will be evaluated in the 7<sup>th</sup> semester.

**Semester - VII**

S. No	Subject Name	L	T	P	Contact Hrs/week	Credits
1.	Digital Forensics	3	0	0	3	3
2.	Industry Work Experience / SIRE* / Major Project	0	0	0	12 (For Major Project only)	5
3.	Comprehensive Viva Voce	-----			-----	2
4.	Specialization Viva Voce	-----			-----	2

**\*SIRE: Scientific Investigation & Research Experience**

**Total Credits (Fourth Year): 39**

**Total Credits (Over four years): 47+52+52+39 = 190 = 165 + 25 (Specialization / Hons.)**

**Total Credit (Fourth Year): 39**

**Total Credits (Over four years): 190**

**List of Electives: -**

- PE I (Theory): Applied Graph Theory (ECS43111)**  
**Communication Network (ECS43113)**  
**Big Data Analytics (ECS43115)**
- PE II (Theory): High Performance Computer Architecture (ECS43110)**  
**Pattern Recognition (ECS43112)**  
**Computational Geometry (ECS43114)**
- PE III (Theory): Image Processing (ECS44101)**  
**Cloud Computing (ECS44103)**  
**Information Retrieval (ECS44105)**  
**Computer Graphics (ECS44107)**  
**Artificial Neural Network and Deep Learning (ECS44109)**
- PE III (Lab): Image Processing Lab (ECS44201)**  
**Cloud Computing Lab (ECS44203)**  
**Information Retrieval Lab (ECS44205)**  
**Computer Graphics Lab (ECS44207)**  
**Artificial Neural Network and Deep Learning Lab (ECS44209)**
- PE IV (Theory): Cryptography & Cyber Security (ECS44111)**  
**Internet of Things (IoT) (ECS44113)**  
**5G Wireless Communication Network (ECS44115)**
- OE I (Theory): Artificial Intelligence (ECS43116)/ Computational Geometry (ECS43114)**
- OE II (Theory): Machine Learning (ECS44117)**
- OE III (Theory): Internet of Things (IoT) (ECS44113)**
- OE IV (Theory): Computer Graphics (ECS44121)**