



KSR College of
Engineering

AN AUTONOMOUS INSTITUTION

25
Years
KSRCE
2001 - 2026
Celebrating
Academic Excellence

NAAC
ACCREDITED **A++**

NBA
ACCREDITED
PROGRAMMES



**B.E. - COMPUTER SCIENCE AND ENGINEERING
(CYBER SECURITY)**

REGULATIONS 2024

(Academic Year 2024-25 Onwards)

**Curriculum & Syllabus
Semester I to IV**





K.S.R. COLLEGE OF ENGINEERING: TIRUCHENGODE - 637 215
(Autonomous)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (CYBERSECURITY)
B.E. – Computer Science and Engineering (Cybersecurity)
(REGULATIONS 2024)

Vision of the Institution

IV	To become a globally renowned institution in Engineering and Management, committed to providing holistic education that fosters innovation and sustainable development
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Mission of the Institution

IM 1	Accomplish value-based quality education through innovative teaching-learning process.
IM 2	Enrich Engineering and Managerial Skills through cutting-edge laboratories to meet the demands of global integration.
IM 3	Enhance innovation and research to meet the evolving needs of industry, society, and sustainable development.

Vision of the Department / Programme: (Computer Science and Engineering (Cybersecurity))

DV	To produce ethical cybersecurity technocrat for supporting digital ecosystems and sustainable global development.
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Mission of the Department / Programme: (Computer Science and Engineering (Cybersecurity))

DM 1	Deliver quality education in cybersecurity through Immersive learning.
DM 2	Impart interdisciplinary skills to meet global cybersecurity challenges through State of art Laboratory.
DM 3	Foster research, innovation, and ethical practices to promote sustainable digital security.

Programme Educational Objectives (PEOs): (Computer Science and Engineering (Cybersecurity))

The graduates of the programme will be able to	
PEO 1	Core Competency: Analyze and manage security incidents through effective threat detection and response strategies.
PEO 2	Professionalism: Exhibit interdisciplinary skills to address cybersecurity challenges with ethical integrity that contribute to global cyber resilience.
PEO 3	Career Development: Engage in lifelong learning, research and entrepreneurship to foster innovation and lead advancements in cyber security

Program Outcomes (POs)

PO1	Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
PO3	Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
PO4	Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).
PO5	Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)
PO6	The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).
PO7	Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)
PO8	Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
PO9	Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences
PO10	Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
PO11	Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

PROGRAMME SPECIFIC OUTCOMES (PSO's)

PSO1	Secure System Design: Design and implement secure systems to protect data and infrastructure from cyber threats.
PSO2	Threat Detection and Response: Detect and respond to cyber threats using modern tools and ensure compliance with relevant standards.

		K. S. R COLLEGE OF ENGINEERING (Autonomous) Approved by AICTE and Affiliated to Anna University, Chennai Accredited by NAAC ('A++' Grade)								Curriculum UG R - 2024		
Department		Computer Science and Engineering (Cybersecurity)										
Programme		B.E.										
SEMESTER I												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
Induction Programme			-	-	-	-	-	-	-	-	-	-
THEORY COURSES												
1.	24ENT19	Professional Communication	HSMC	45	0	0	45	90	3	40	60	100
2.	24EET06	Basics of Electrical and Electronics Engineering	ESC	45	0	0	45	90	3	40	60	100
3.	24ITT16	Programming for Problem Solving	ESC	45	0	0	45	90	3	40	60	100
4.	24GET19	தமிழ் மரபு / Heritage of Tamils	HSMC	15	0	0	15	30	1	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT												
5.	24MAI19	Matrices and Calculus	BSC	30	15	30	45	120	4	50	50	100
6.	24CHI06	Chemistry for Engineers	BSC	45	0	30	45	120	4	50	50	100
LABORATORY COURSES												
7.	24ITP16	Programming for Problem Solving Laboratory	ESC	0	0	30	0	30	1	60	40	100
8.	24MEP16	Engineering Graphics Laboratory	ESC	15	0	30	15	60	2	60	40	100
9.	24GEP16	Engineering Experience Laboratory	ESC	0	0	30	0	30	1	60	40	100
EMPLOYABILITY ENHANCEMENT COURSE												
10.	24SSP19	Aptitude and Coding Skills-I	EEC	0	0	30	0	30	1	60	40	100
TOTAL				240	15	180	255	690	23	1000		

SEMESTER II												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
THEORY COURSES												
1	24CST29	Python Programming	PCC	45	0	0	45	90	3	40	60	100
2	24CST21	Design Thinking	PCC	30	0	0	30	60	2	40	60	100
3	24GET29	தமிழரும் தொழில் நுட்பமும்/ Tamils and Technology	HSMC	15	0	0	15	30	1	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT												
4	24MAI29	Probability and Statistics	BSC	30	15	30	45	120	4	50	50	100
5	24PHI07	Engineering Physics	BSC	45	0	30	45	120	4	50	50	100
6	24ECI26	Digital Principles and System Design	ESC	45	0	30	45	120	4	50	50	100
LABORATORY COURSES												
7	24ENP29	Professional Communication Laboratory	HSMC	0	0	30	0	30	1	60	40	100
8	24CSP29	Python Programming Laboratory	PCC	0	0	30	0	30	1	60	40	100
EMPLOYABILITY ENHANCEMENT COURSE												
9	24SSP29	Aptitude and Coding Skills -II	EEC	0	0	30	0	30	1	60	40	100
MANDATORY COURSE												
10	24MCP09	Mandatory Course - I	MC	0	0	30	0	30	0	-	-	-
TOTAL				210	15	210	225	660	21	900		
SEMESTER III												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
THEORY COURSES												
1	24MAT37	Discrete Mathematical Structures	BSC	45	15	0	60	120	4	40	60	100
2	24CBT31	Operating Systems and security	PCC	45	0	0	45	90	3	40	60	100
3	24CBT32	Data Structures and Algorithms	PCC	45	0	0	45	90	3	40	60	100
4	24CBT33	Programming in JAVA	PCC	45	0	0	45	90	3	40	60	100
5	24CST38	Computer Organization and Architecture	PCC	45	0	0	45	90	3	40	60	100
LABORATORY COURSES												
6	24CBP31	Operating Systems and security Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
7	24CBP32	Data Structures and Algorithms Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
8	24CBP33	Programming in JAVA Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
9	24CBP36	Design Studio-I	PCC	0	0	30	0	30	1	60	40	100
EMPLOYABILITY ENHANCEMENT COURSE												
10	24SDP39	Soft Skills Development-III	EEC	0	0	30	0	30	1	60	40	100
TOTAL				225	15	195	240	675	22.5	1000		

SEMESTER IV												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
THEORY COURSES												
1	24MAT46	Numerical and Computational Techniques	BSC	45	15	0	60	120	4	40	60	100
2	24ECT46	Microprocessors and Microcontrollers	ESC	45	0	0	45	90	3	40	60	100
3	24CBT42	Cryptography and Cyber Security	PCC	45	0	0	45	90	3	40	60	100
4	24GET49	Universal Human Values	HSMC	45	0	0	45	90	3	40	60	100
5	24CBT43	Automata and Compiler Design	PCC	45	15	0	60	120	4	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT												
6.	24CBT41	Database Management Systems and Security	PCC	45	0	30	45	120	4	50	50	100
LABORATORY COURSES												
7	24ECP46	Microprocessors and Microcontrollers Laboratory	ESC	0	0	45	0	45	1.5	60	40	100
8	24CBP42	Design Studio-II	PCC	0	0	30	0	30	1	60	40	100
EMPLOYABILITY ENHANCEMENT COURSE												
9	24SDP49	Soft Skills Development-IV	EEC	0	0	30	0	30	1	60	40	100
TOTAL				270	30	135	300	735	24.5	900		
SEMESTER V												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
THEORY COURSES												
1	24CBT52	Networks In Security	PCC	45	30	0	45	120	4	40	60	100
2	24CBT51	Engineering Secure Software Systems	PCC	45	0	0	45	90	3	40	60	100
3		Professional Elective – I	PEC	45	0	0	45	90	3	40	60	100
4		Professional Elective – II	PEC	45	0	0	45	90	3	40	60	100
5		Open Elective – I	OEC	45	0	0	45	90	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT												
6	24CBI51	Embedded Systems and IoT	PCC	45	0	30	45	120	4	50	50	100
LABORATORY COURSES												
7	24CBP53	Networks in Security Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
8	24CBP51	Engineering Secure Software Systems Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
9	24CBP52	Internship-I *	EEC	-	-	-	30	30	1	-	100	100
MANDATORY COURSE												
10		Mandatory Course - II	MC	15	0	0	15	30	0	100	-	100
TOTAL				285	0	120	315	720	24	1000		
*- The students should undergo two weeks internship during the IV semester summer vacation.												

SEMESTER VI												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
THEORY COURSES												
1	24CBT61	Penetration Testing and Vulnerability Assessment	PCC	45	0	0	45	90	3	40	60	100
2	24CBT62	Fundamentals of Ethical Hacking	PCC	45	0	0	45	90	3	40	60	100
3	24CBT63	Cyber Crimes and Laws	PCC	45	0	0	45	90	3	40	60	100
4		Professional Elective – III	PEC	45	0	0	45	90	3	40	60	100
5		Professional Elective – IV	PEC	45	0	0	45	90	3	40	60	100
6		Open Elective – II	OEC	45	0	0	45	90	3	40	60	100
LABORATORY COURSE												
7	24CBP61	Penetration Testing and Vulnerability Assessment Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
8	24CBP62	Ethical Hacking Laboratory	PCC	0	0	45	0	45	1.5	60	40	100
EMPLOYABILITY ENHANCEMENT COURSE												
9	24CBP63	Mini Project	EEC	0	0	60	0	60	2	60	40	100
	TOTAL			270	0	150	270	690	23	900		
SEMESTER VII												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
THEORY COURSES												
1	24GET79	Professional Ethics	HSMC	45	0	0	45	90	3	40	60	100
2		Management Elective	HSMC	45	0	0	45	90	3	40	60	100
4		Professional Elective – V	PEC	45	0	0	45	90	3	40	60	100
5		Professional Elective – VI	PEC	45	0	0	45	90	3	40	60	100
6		Open Elective –III	OEC	45	0	0	45	90	3	40	60	100
EMPLOYABILITY ENHANCEMENT COURSE												
8	24CBP72	Project work Phase - I	EEC	0	0	60	0	60	2	60	40	100
9	24CBP73	Internship-II *	EEC	-	-	-	30	30	1	-	100	100
TOTAL				225	0	60	255	540	18	900		
*- The students should undergo two weeks internship during the VI semester summer vacation.												
SEMESTER VIII												
S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
EMPLOYABILITY ENHANCEMENT COURSE												
1	24CBP81	Project Work Phase – II	EEC	0	0	240	0	240	8	60	40	100
TOTAL				0	0	240	0	240	8	100		
TOTAL CREDITS										163		

TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE=164

Note:HSMC- Humanities and Social Sciences including Management courses, BSC - Basic Science Courses, ESC - Engineering Science Courses, PCC - Professional core courses, PEC- Professional Elective courses, OEC - Open Elective courses, EEC – Employability Enhancement Courses &MC- Mandatory courses.

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Department	Computer Science and Engineering (Cybersecurity)	
Programme	B.E.	

HUMANITIES, SOCIAL SCIENCE AND MANAGEMENT COURSES (HSMC)												
S. No.	Course Code	Course Title	Semester	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
1	24ENT19	Professional Communication	I	45	0	0	45	90	3	40	60	100
2	24GET19	தமிழ் மரபு/ Heritage of Tamils	I	15	0	0	15	30	1	40	60	100
3	24GET29	தமிழரும் தொழில் நுட்பமும்/ Tamils and Technology	II	15	0	0	15	30	1	40	60	100
4	24ENP29	Professional Communication Laboratory	II	0	0	30	0	30	1	60	40	100
5	24GET49	Universal Human values	IV	45	0	0	45	90	3	40	60	100
6	24GET79	Professional Ethics	VII	45	0	0	45	90	3	40	60	100
7	24MGT7n	Management - Elective	VII	45	0	0	45	90	3	40	60	100
TOTAL				210	0	30	210	450	15			
BASIC SCIENCE COURSES (BSC)												
S. No.	Course Code	Course Title	Semester	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
1	24MAI19	Matrices and Calculus	I	30	15	30	45	120	4	50	50	100
2	24CHI06	Chemistry for Engineers	I	45	0	30	45	120	4	50	50	100
3	24MAI29	Probability and Statistics	II	30	15	30	45	120	4	50	50	100
4	24PHI07	Engineering Physics	II	45	0	30	45	120	4	50	50	100
5	24MAT37	Discrete Mathematical Structures	III	45	15	0	60	120	4	40	60	100
6	24MAT46	Numerical and Computational Techniques	IV	45	15	0	60	120	4	40	60	100
TOTAL				240	60	120	300	720	24			

ENGINEERING SCIENCE COURSES(ESC)												
S. No.	Course Code	Course Title	Semester	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
1.	24EET06	Basics of Electrical and Electronics Engineering	I	45	0	0	45	90	3	40	60	100
2.	24ITT16	Programming for Problem Solving	I	45	0	0	45	90	3	40	60	100
3.	24ITP16	Programming for Problem Solving Laboratory	I	0	0	30	0	30	1	60	40	100
4.	24MEP16	Engineering Graphics Laboratory	I	30	0	30	0	60	2	60	40	100
5.	24GEP16	Engineering Experience Laboratory	I	0	0	30	0	30	1	60	40	100
6.	24ECI26	Digital Principles and System Design	II	45	0	30	45	120	4	50	50	100
7.	24ECT46	Microprocessors and Microcontrollers	IV	45	0	0	45	90	3	40	60	100
8.	24ECP46	Microprocessors and Microcontrollers Laboratory	IV	0	0	45	0	45	1.5	60	40	100
TOTAL				210	0	165	180	555	18.5			

EMPLOYABILITY ENHANCEMENT COURSES (EEC)												
S. No.	Course Code	Course Title	Semester	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
1	24SDP19	Soft Skills Development -I	I	0	0	30	0	30	1	60	40	100
2	24SDP29	Soft Skills Development -II	II	0	0	30	0	30	1	60	40	100
3	24SDP39	Soft Skills Development -III	III	0	0	30	0	30	1	60	40	100
4	24SDP49	Soft Skills Development -IV	IV	0	0	30	0	30	1	60	40	100
5	24CBP52	Internship-I	V	-	-	-	30	30	1	-	100	100
6	24CBP63	Mini Project	VI	0	0	60	0	60	2	60	40	100
7	24CBP72	Project Work Phase – I	VII	0	0	60	0	60	2	60	40	100
8	24CBP73	Internship-II	VII	-	-	-	30	30	1	-	100	100
9	24CBP81	Project Work Phase – II	VIII	0	0	240	0	240	8	60	40	100
TOTAL				0	0	480	60	540	18			

PROFESSIONAL CORE COURSES (PCC)												
S. No.	Course Code	Course Title	Semester	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
1	24CST21	Design Thinking	II	30	0	0	30	60	2	40	60	100
2	24CST29	Python Programming	II	45	0	0	45	90	3	40	60	100
3	24CSP29	Python Programming Laboratory	II	0	0	30	0	30	1	60	40	100
4	24CBT32	Data Structures and Algorithms	III	45	0	0	45	90	3	40	60	100
5	24CBP32	Data Structures and Algorithms Laboratory	III	0	0	45	0	45	1.5	60	40	100
6	24CBT33	Programming in JAVA	III	45	0	0	45	90	3	40	60	100
7	24CBT31	Operating Systems and security	III	45	0	0	45	90	3	40	60	100
8	24CST38	Computer Architecture and Organization	III	45	0	0	45	90	3	40	60	100
9	24CBP33	Programming in JAVA Laboratory	III	0	0	45	0	45	1.5	60	40	100
10	24CBP31	Operating Systems and security Laboratory	III	0	0	45	0	45	1.5	60	40	100
11	24CBP34	Design Studio-I	III	0	0	30	0	30	1	60	40	100
12	24CBT42	Cryptography and Cyber Security	IV	45	0	0	45	90	3	40	60	100
13	24CBT43	Automata and Compiler Design	IV	45	15	0	60	120	4	40	60	100
14	24CBT41	Database Management Systems and security	IV	45	0	30	45	120	4	50	50	100
15	24CBP42	Design Studio-II	IV	0	0	30	0	30	1	60	40	100
16	24CBT52	Networks In Security	V	45	30	0	45	120	4	40	60	100
17	24CBT51	Engineering Secure Software Systems	V	45	0	0	45	90	3	40	60	100
18	24CBI51	Embedded Systems and IoT	V	45	0	30	45	120	4	50	50	100
19	24CBP53	Networks in Security Laboratory	V	0	0	45	0	45	1.5	60	40	100
20	24CBP51	Engineering Secure Software Systems Laboratory	V	0	0	45	0	45	1.5	60	40	100
21	24CBT61	Penetration Testing and Vulnerability Assessment	VI	45	0	0	45	90	3	40	60	100
22	24CBT62	Fundamentals of Ethical Hacking	VI	45	0	0	45	90	3	40	60	100
23	24CBT63	Cyber Crimes and Laws	VI	45	0	0	45	90	3	40	60	100
24	24CBP61	Penetration Testing and Vulnerability Assessment Laboratory	VI	0	0	45	0	45	1.5	60	40	100
25	24CBP62	Ethical Hacking Laboratory	VI	0	0	45	0	45	1.5	60	40	100
TOTAL				660	15	465	675	1815	61.5			

<u>VERTICAL 1</u> CYBER SECURITY AND DATA PRIVACY	<u>VERTICAL 2</u> DIGITAL FORENSICS	<u>VERTICAL 3</u> DATA SCIENCE	<u>VERTICAL 4</u> EMERGING TECHNOLOGIES	<u>VERTICAL 5</u> VULNERABILITY ASSESSMENT AND PENETRATION TESTING	<u>VERTICAL 6</u> INTERNET OF THINGS
Social Engineering Security	Introduction to Cyber Forensics	Data Warehousing and Data Mining	UI and UX Design	Cloud Security	Adhoc and Wireless Sensor Networks
Cyber threat intelligence	Cyber attacks and counter measures	Distributed Computing	Augmented Reality/Virtual Reality	Open Source Programming for security	Python Programming for IoT
Steganography and Digital Watermarking	Computer Forensics	Big Data Analytics	Computer Vision	Vulnerability Analysis	Open Source Programming for IoT
Crypto-Currency and Block chain Technologies	Database Forensics	Artificial Intelligence	Introduction to Robotics	Malware Analysis and Mitigation Techniques	Introduction to Industry 4.0
Digital and Mobile Forensics	Memory Forensics	Data Modelling	Fundamentals of DevOps	Threat Analysis	Industrial and Medical IoT
Security and Privacy in Cloud.	Network Forensics	Exploratory Data Analysis	Text and Speech Analysis	Denial Of Service	IoT and Multimedia Technology
Firewalls and Intrusion Detection System	Mobile Forensics	Quantum Computing	Modern Cryptography	Session Hijacking	Design of Smart Cities
Secure Software Engineering	Web Forensics	Software Defined Networks	Machine Learning security	Cloud Pen Testing	Applications of IoT in Robotics

S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
VERTICAL 1: CYBER SECURITY AND DATA PRIVACY												
1.	24CBE01	Social Engineering security	PEC	45	0	0	45	90	3	40	60	100
2.	24CBE02	Cyber threat intelligence	PEC	45	0	0	45	90	3	40	60	100
3.	24CBE03	Steganography and Digital Watermarking	PEC	45	0	0	45	90	3	40	60	100
4.	24CBE04	Crypto-Currency and Block chain Technologies	PEC	45	0	0	45	90	3	40	60	100
5.	24CBE05	Digital and Mobile Forensics	PEC	45	0	0	45	90	3	40	60	100
6.	24CBE06	Security and Privacy in Cloud.	PEC	45	0	0	45	90	3	40	60	100
7.	24CBE07	Firewalls and Intrusion Detection System	PEC	45	0	0	45	90	3	40	60	100
8.	24CBE08	Secure Software Engineering	PEC	45	0	0	45	90	3	40	60	100
VERTICAL 2: DIGITAL FORENSICS												
1.	24CBE09	Introduction to Cyber Forensics	PEC	45	0	0	45	90	3	40	60	100
2.	24CBE10	Cyber-attacks and counter measures	PEC	45	0	0	45	90	3	40	60	100
3.	24CBE11	Computer Forensics	PEC	45	0	0	45	90	3	40	60	100
4.	24CBE12	Database Forensics	PEC	45	0	0	45	90	3	40	60	100
5.	24CBE13	Memory Forensics	PEC	45	0	0	45	90	3	40	60	100
6.	24CBE14	Network Forensics	PEC	45	0	0	45	90	3	40	60	100
7.	24CBE15	Mobile Forensics	PEC	45	0	0	45	90	3	40	60	100
8.	24CBE16	Web Forensics	PEC	45	0	0	45	90	3	40	60	100
VERTICAL 3: DATA SCIENCE												
1.	24IOE01	Data Warehousing and Data Mining	PEC	45	0	0	45	90	3	40	60	100
2.	24IOE02	Distributed Computing	PEC	45	0	0	45	90	3	40	60	100
3.	24IOE03	Big Data Analytics	PEC	45	0	0	45	90	3	40	60	100
4.	24CBE17	Artificial Intelligence	PEC	45	0	0	45	90	3	40	60	100
5.	24IOE05	Data Modelling	PEC	45	0	0	45	90	3	40	60	100
6.	24IOE06	Exploratory Data Analysis	PEC	45	0	0	45	90	3	40	60	100
7.	24IOE07	Quantum Computing	PEC	45	0	0	45	90	3	40	60	100
8.	24CSE24	Software Defined Networks	PEC	45	0	0	45	90	3	40	60	100

S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
VERTICAL4: EMERGING TECHNOLOGIES												
1.	24CDE01	UI and UX Design	PEC	45	0	0	45	90	3	40	60	100
2.	24CDE02	Augmented Reality/Virtual Reality	PEC	45	0	0	45	90	3	40	60	100
3.	24ITE03	Computer Vision	PEC	45	0	0	45	90	3	40	60	100
4.	24CDE04	Introduction to Robotics	PEC	45	0	0	45	90	3	40	60	100
5.	24CBE18	Fundamentals of DevOps	PEC	45	0	0	45	90	3	40	60	100
6.	24ITE06	Text and Speech Analysis	PEC	45	0	0	45	90	3	40	60	100
7.	24CBE19	Modern Cryptography	PEC	45	0	0	45	90	3	40	60	100
8.	24CBE20	Machine Learning security	PEC	45	0	0	45	90	3	40	60	100
VERTICAL 5: VULNERABILITY ASSESSMENT AND PENETRATION TESTING												
1.	24CBE21	Cloud Security	PEC	45	0	0	45	90	3	40	60	100
2.	24CBE22	Open Source Programming for security	PEC	45	0	0	45	90	3	40	60	100
3.	24CBE23	Vulnerability Analysis	PEC	45	0	0	45	90	3	40	60	100
4.	24CBE24	Malware Threats	PEC	45	0	0	45	90	3	40	60	100
5.	24CBE25	Threat Analysis	PEC	45	0	0	45	90	3	40	60	100
6.	24CBE26	Denial Of Service	PEC	45	0	0	45	90	3	40	60	100
7.	24CBE27	Session Hijacking	PEC	45	0	0	45	90	3	40	60	100
8.	24CBE28	Cloud Pen Testing	PEC	45	0	0	45	90	3	40	60	100
VERTICAL 6: INTERNET OF THINGS												
1.	24IOE13	Adhoc and Wireless Sensor Networks	PEC	45	0	0	45	90	3	40	60	100
2.	24IOE14	Python Programming for IoT	PEC	45	0	0	45	90	3	40	60	100
3.	24IOE15	Open Source Programming for IoT	PEC	45	0	0	45	90	3	40	60	100
4.	24IOE16	Introduction to Industry 4.0	PEC	45	0	0	45	90	3	40	60	100
5.	24IOE17	Industrial and Medical IoT	PEC	45	0	0	45	90	3	40	60	100
6.	24IOE18	IoT and Multimedia Technology	PEC	45	0	0	45	90	3	40	60	100
7.	24IOE19	Design of Smart Cities	PEC	45	0	0	45	90	3	40	60	100
8.	24IOE20	Applications of IoT in Robotics	PEC	45	0	0	45	90	3	40	60	100

S. No.	Course Code	Course Title	Category	Periods per Sem					Credit C=T/30	Max. Marks		
				L	T	P	SL	Tot		CA	ES	Tot
MANAGEMENT ELECTIVES												
1.	24MGT01	Total Quality Management	HSMC	45	0	0	45	90	3	40	60	100
2.	24MGT02	Principles of Management	HSMC	45	0	0	45	90	3	40	60	100
3.	24MGT03	Engineering Economics	HSMC	45	0	0	45	90	3	40	60	100
4.	24MGT04	Human Resource Management	HSMC	45	0	0	45	90	3	40	60	100
5.	24MGT05	Industrial Management	HSMC	45	0	0	45	90	3	40	60	100
MANDATORY COURSE												
MANDATORY COURSE – I& II												
1	24MCP09	Yoga for Stress Management	MC	0	0	30	0	30	0	-	-	-
2	24MCT01	Constitution of India	MC	15	0	0	15	30	0	100	-	100
3	24MCT02	Environmental Science and sustainability	MC	15	0	0	15	30	0	100	-	100
4	24MCT03	Introduction to Gender Studies	MC	15	0	0	15	30	0	100	-	100
5	24MCT04	Life Science for Engineers	MC	15	0	0	15	30	0	100	-	100
6	24MCT05	Industrial safety	MC	15	0	0	15	30	0	100	-	100
7	24MCT06	Essence of Indian Traditional Knowledge	MC	15	0	0	15	30	0	100	-	100
8	24MCT07	Elements of Literature	MC	15	0	0	15	30	0	100	-	100
9	24MCT08	Disaster Management	MC	15	0	0	15	30	0	100	-	100

S. No.	Course Code	Course Title	Category	Periods per Sem					Credit	Max. Marks		
				L	T	P	SL	Tot	C=T/30	CA	ES	Tot
OPEN ELECTIVE COURSES OFFERED BY OTHER DEPARTMENT												
1.	24AUO01	Basics of Automobile	OEC	45	0	0	45	90	3	40	60	100
2.	24AUO02	Automotive Engine Technology	OEC	45	0	0	45	90	3	40	60	100
3.	24AUO03	Automotive Vehicle Technology	OEC	45	0	0	45	90	3	40	60	100
4.	24AUO04	Automotive Safety	OEC	45	0	0	45	90	3	40	60	100
5.	24AUO05	Hybrid Vehicles	OEC	45	0	0	45	90	3	40	60	100
6.	24AUO06	Off Highway Vehicles	OEC	45	0	0	45	90	3	40	60	100

7.	24AUO07	Modern and Intelligent Vehicle	OEC	45	0	0	45	90	3	40	60	100
8.	24AUO08	Vehicle Maintenance	OEC	45	0	0	45	90	3	40	60	100
9.	24BMO01	Basics of Biomedical Instrumentation	OEC	45	0	0	45	90	3	40	60	100
10	24BMO02	Imaging Equipments	OEC	45	0	0	45	90	3	40	60	100
11	24BMO03	Biometric systems	OEC	45	0	0	45	90	3	40	60	100
12	24BMO04	Human Assist Devices	OEC	45	0	0	45	90	3	40	60	100
13	24BMO05	Medical Informatics	OEC	45	0	0	45	90	3	40	60	100
14	24BMO06	Medical Innovation and	OEC	45	0	0	45	90	3	40	60	100
15	24CEO01	Architecture Heritage of India	OEC	45	0	0	45	90	3	40	60	100
16	24CEO02	Elementary Civil Engineering	OEC	45	0	0	45	90	3	40	60	100
17	24CEO03	Modern Construction Materials	OEC	45	0	0	45	90	3	40	60	100
18	24CEO04	Water and Air Pollution	OEC	45	0	0	45	90	3	40	60	100
19	24CEO05	Water Harvesting and	OEC	45	0	0	45	90	3	40	60	100
20	24EEO01	Electrical Drives and Control	OEC	45	0	0	45	90	3	40	60	100
21	24EEO02	Electrical Power Generation	OEC	45	0	0	45	90	3	40	60	100
22	24EEO03	Industrial Automation	OEC	45	0	0	45	90	3	40	60	100
23	24EEO04	Electrical Instruments and	OEC	45	0	0	45	90	3	40	60	100
24	24EEO05	Energy Conservation and	OEC	45	0	0	45	90	3	40	60	100
25	24EEO06	Electrical Wiring, Estimation and	OEC	45	0	0	45	90	3	40	60	100
26	24EEO07	Fundamentals of Electrical	OEC	45	0	0	45	90	3	40	60	100
27	24EEO08	Fundamentals of Electric	OEC	45	0	0	45	90	3	40	60	100
28	24ECO01	Consumer Electronics	OEC	45	0	0	45	90	3	40	60	100
29	24ECO02	NANO Technology	OEC	45	0	0	45	90	3	40	60	100
30	24ECO03	Fundamentals of Robotics	OEC	45	0	0	45	90	3	40	60	100
31	24ECO04	Principles of Communication	OEC	45	0	0	45	90	3	40	60	100
32	24ECO05	Electronics and Microprocessor	OEC	45	0	0	45	90	3	40	60	100
33	24MEO01	Basic Mechanical Engineering	OEC	45	0	0	45	90	3	40	60	100
34	24MEO02	Solar Energy Utilization	OEC	45	0	0	45	90	3	40	60	100
35	24MEO03	Selection of Materials	OEC	45	0	0	45	90	3	40	60	100
36	24MEO04	Fibre Reinforced Plastics	OEC	45	0	0	45	90	3	40	60	100
37	24MEO05	Rapid Prototyping	OEC	45	0	0	45	90	3	40	60	100
38	24SFO01	Occupational health and	OEC	45	0	0	45	90	3	40	60	100

39	24SFO02	Construction safety	OEC	45	0	0	45	90	3	40	60	100
40	24SFO03	Building fire safety	OEC	45	0	0	45	90	3	40	60	100
41	24SFO04	Legal aspects of safety	OEC	45	0	0	45	90	3	40	60	100
42	24SFO05	Safety measures for engineers	OEC	45	0	0	45	90	3	40	60	100
OPEN ELECTIVES OFFERED BY THE DEPARTMENT												
1.	24CBO01	Fundamentals of Cyber security	OEC	45	0	0	45	90	3	40	60	100
2.	24CBO02	Penetration and Vulnerability Testing Techniques	OEC	45	0	0	45	90	3	40	60	100
3.	24CBO03	Basics of Digital Forensics	OEC	45	0	0	45	90	3	40	60	100
4.	24CBO04	Introduction to Ethical Hacking	OEC	45	0	0	45	90	3	40	60	100
5.	24CBO05	Malware analysis	OEC	45	0	0	45	90	3	40	60	100

Summary										
Name of the Programme: B.E Computer Science and Engineering (Cyber security)										
CATEGORY	I	II	III	IV	V	VI	VII	VIII	TOTAL CREDITS	%
HSMC	4	2	-	3	-	-	6	-	15	9.2
BSC	8	8	4	4	-	-	-	-	24	14.7
ESC	10	4	-	4.5	-	-	-	-	18.5	11.3
PCC	-	6	17.5	12	14	12	-	-	61.5	37.5
PEC	-	-	-	-	6	6	6	-	18	11.0
OEC	-	-	-	-	3	3	3	-	9	5.5
EEC	1	1	1	1	1	2	3	8	18	11.0
MC	-	✓	-	-	✓	-	-	-	-	-
Total	23	21	22.5	24.5	24	23	18	8	164	100.0

Total No.Of Credits=164

Total No.Of.Credit for Lateral Entry Students=120