

B.TECH. – CSE- R2026 – CBCS

Department of Computer Science and Engineering

Total credits: 161

[L= Lecture, T = Tutorials, P = Practical's, C=Credits]

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER I										
THEORY COURSES										
1.	BS	26MA1201	Matrices and Calculus	3	1	0	4	40	60	100
2.	HS	26HS1102	Universal Human Values	2	0	0	2	40	60	100
3.	HS	26HS1101	தமிழர்மரபு / Heritage of Tamils	1	0	0	1	100	-	100
4.	HS	26EN1101	Professional English	3	0	0	3	40	60	100
5.	ES	26CS1301	Problem Solving using C Programming	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
1.	ES	26AD1301	Essentials of Computing	3	0	2	4	50	50	100
LABORATORY COURSES										
1.	ES	26CS1L01	Problem Solving using C Programming Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
1.	CE	26CD1X01	Communication Skills	1	0	0	1	100	-	100
MANDATORY COURSES										
1.	MC	26MCXXXX	Mandatory Course I	1	0	0	0			
TOTAL CONTACT HOURS:				17	1	6	20			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CI A	ES E	Total
SEMESTER II										
THEORY COURSES										
1	BS	26MA2201	Applied Linear Algebra	3	1	0	4	40	60	100
2	HS	26HS2101	தமிழரும் தொழில்நுட்பமும் / Tamils and Technology	1	0	0	1	100	-	100
THEORY COURSES WITH LABORATORY COMPONENT										
1	ES	26IT2301	Python Programming	3	0	3	4.5	50	50	100
2	ES	26EC2303	Digital Logic Design and Computer Organization	2	0	2	3	50	50	100
3	BS	26PH1203	Physics for Information Science	3	0	3	4.5	50	50	100
LABORATORY COURSES										
1	PC	26CS2L01	Design Thinking Laboratory	0	0	4	2	60	40	100
2.	HS	26EN2L01	English Language Proficiency Laboratory	0	0	4	2	100	-	100
MANDATORY COURSES										
1	MC	26MCXXX X	Mandatory Course II	1	0	0	0	-	-	-
TOTAL CONTACT HOURS:				13	1	16	21			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CI A	ES E	Total
SEMESTER III										
THEORY COURSES										
1	BS	26MA3201	Discrete Mathematical Structures	3	1	0	4	40	60	100
2	PC	26CS3401	Design Analysis and Algorithms	3	0	0	3	40	60	100
3	PC	26CS3402	Database Management Systems	3	0	0	3	40	60	100
4	HS	26CS3101	Climate Change and Sustainability	2	0	0	2	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
1	PC	26CS3403	Data Structures	3	0	2	4	50	50	100
2	PC	26CS3404	Object-Oriented Programming Using C++	2	0	4	4	50	50	100
LABORATORY COURSES										
1	PC	26CS3L01	Database Management Systems Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
1	CE	26SD3X01	Logical and Analytical Thinking	1	0	0	1	100	-	100
TOTAL CONTACT HOURS:				18	1	10	23			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER IV										
THEORY COURSES										
1.	PC	26CS4401	Operating Systems	3	0	0	3	40	60	100
2.	PC	26CS4402	Fundamentals of AI	3	0	0	3	40	60	100
3.	PC	26CS4403	Theory of Computation	3	1	0	4	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
1.	PC	26CS4404	Java Programming	3	0	2	4	50	50	100
2.	PC	26CS4405	Computer Networks	3	0	2	4	50	50	100
3	PC	26CS4406	Python for Data Science	3	0	2	4	50	50	100
CAREER ENHANCEMENT COURSES										
1.	CE	26CD4X01	Advanced Aptitude & Reasoning	1	0	0	1	100	-	100
2.	CE	26SDXXXX	Skill Development Course-I	1	0	0	1	100	-	100
TOTAL CONTACT HOURS:				20	1	6	24			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER V										
THEORY COURSES										
1.	PC	26CS5401	Compiler Design	3	0	0	3	40	60	100
2.	PC	26CS5402	Software Engineering	3	0	0	3	40	60	100
3.	PC	26CS5403	Machine Learning	3	0	0	3	40	60	100
4.	PC	26CS5404	Cryptography and Network Security Principles	3	0	0	3	40	60	100
5.	PE	26XX55XX	Professional Elective-I	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
1.	PC	26CS5405	Ethical Hacking	3	0	2	4	50	50	100
2.	PC	26CS5406	Full Stack Development	2	0	4	4	50	50	100
LABORATORY COURSES										
1.	PC	26CS5L01	Machine Learning Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
1.	CE	26CD5X01	Professional Coding for Career Development	1	0	0	1	100	-	100
TOTAL CONTACT HOURS:				22	0	8	26			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER VI										
THEORY COURSES										
1.	PC	26CS6401	Deep Learning	3	0	0	3	40	60	100
2.	PC	26CS6402	Software Testing and Automation	3	0	0	3	40	60	100
3.	PE	26XX65XX	Professional Elective-II	3	0	0	3	40	60	100
4.	PE	26XX65XX	Professional Elective-III	3	0	0	3	40	60	100
5.	OE	26XX66XX	Open Elective-I	3	0	0	3	40	60	100
LABORATORY COURSES										
1.	PC	26CS6L01	Deep Learning Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
1.	CE	26CD6X01	Advanced Programming Skills	1	0	0	1	100	-	100
2.	CE	26SDXXXX	Skill Development Course-II	1	0	0	1	100	-	100
PROJECT WORK										
1.	PW	26CS6701	Multidisciplinary Mini-Project	0	0	4	2	60	40	100
TOTAL CONTACT HOURS:				19	0	8	23			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER VII										
THEORY COURSES										
1.	HS	26HS7101	Research, Innovation and Entrepreneurship	2	0	0	2	40	60	100
2.	HS	26CS7101	Principles of Management	2	0	0	2	40	60	100
3.	PE	26XX75XX	Professional Elective-IV	3	0	0	3	40	60	100
4.	PE	26XX75XX	Professional Elective-V	3	0	0	3	40	60	100
5.	OE	26XX76XX	Open Elective-II	3	0	0	3	40	60	100
CAREER ENHANCEMENT COURSES										
1.	CE	26SD7101	Career Readiness & Employability Skills	1	0	0	1	100	-	100
2.	CE	26INXXXX	Internship	0	0	4	2	100	-	100
PROJECT WORK										
1.	PW	26CS7701	Project Work -Phase I	0	0	4	2	60	40	100
TOTAL CONTACT HOURS:				14	0	8	18			

Sl. No	Category	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER VIII										
PROJECT WORK										
1	PW	26CS8701	Project Work -Phase II	0	0	16	8	60	40	100
TOTAL CONTACT HOURS:				0	0	16	8			

CHAPTER – 4

List of Programme Electives for Professional Electives and Honours Degree

AI and Machine Learning		Data Analytics		Fundamentals of IOT		Security And Privacy		Cloud Essentials		Emerging Technologies	
Course Code	Course Title	Course Code	Course Title	Course Code	Course Title	Course Code	Course Title	Course Code	Course Title	Course Code	Course Title
26AMX501	Knowledge Representation and Reasoning	26ADX501	Search Methods for Problem Solving	26CSX501	Fundamentals of IoT	26CYX501	Information Security	26ITX501	Data Warehousing & Mining	26CSX509	Deep Learning and Neural Networks
26AMX502	Recommendation Systems	26ADX502	Image and Video Analytics	26CSX502	Sensors and Actuators for IoT	26CYX502	Modern Cryptography	26ITX502	Cloud Computing	26CSX510	Agentic AI
26AMX503	Soft Computing	26ADX503	Web and Social Media Analytics	26CSX503	IoT Networking & Communication	26CYX503	Security in Communication Networks	26ITX503	Distributed Systems	26CSX511	Blockchain Architecture and Design
26AMX504	Computer Vision	26ADX504	Predictive Analytics	26CSX504	IoT Cloud Platforms	26CYX504	Malware analysis	26ITX504	Cloud Application Development and Deployment	26CSX512	Large Language Models
26AMX505	Human Computer Interaction	26ADX505	Stream Data Analytics	26CSX505	Communication Protocols for IoT	26CYX505	Hardware Security	26ITX505	Devops	26CSX513	Augmented and virtual reality
26AMX506	Business Intelligence Analytics	26ADX506	Social Network Analysis and Security	26CSX506	IoT Analytics	26CYX506	Cyber threat for IoT and Cloud	26ITX506	Edge Computing	26CSX514	Federated Learning
26AMX507	Robotic Process Automation	26ADX507	Statistical Learning for Data Science	26CSX507	Industrial IoT	26CYX507	Secure Coding	26ITX507	Cloud Data Centric Networking	26CSX515	Explainable AI
26AMX508	Information Visualization	26ADX508	Learning Analytical Tools	26CSX508	IoT in 5G Networks	26CYX508	Mobile Application Security	26ITX508	Serverless Computing	26CSX516	Quantum Computing

*** Elective Course Structure: L–T–P–C: 3–0–0–3 | Assessment: CIA – 40%, ESE – 60%**

LIST OF OPEN ELECTIVES

S. No	Department	Course Code	Course Title	Hours/Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
1.	AIDS	26ADX601	Exploratory Data Analysis	3	0	0	3	40	60	100
2.	CSE	26CSX601	Introduction to Java Programming	3	0	0	3	40	60	100
3.	CSE (CS)	26CYX601	Introduction to Cyber Security	3	0	0	3	40	60	100
4.	EEE	26EEX601	Electrical Safety and Standards	3	0	0	3	40	60	100
5.	EEE	26EEX602	IoT for Smart Energy	3	0	0	3	40	60	100
6.	ECE	26ECX601	Basics of Biomedical Instrumentation	3	0	0	3	40	60	100
7.	ECE	26ECX602	Fundamentals of Microprocessor and Microcontrollers	3	0	0	3	40	60	100
8.	IT	26ITX601	Industry 5.0	3	0	0	3	40	60	100
9.	MECH	26MEX601	Drone Design and Development	3	0	0	3	40	60	100
10.	Chemistry	26CHX601	Solid and E-Waste Management	3	0	0	3	40	60	100
11.	Chemistry	26CHX602	Energy Conservation and Management	3	0	0	3	40	60	100
12.	Chemistry	26CHX603	Sustainable Development Goals and Engineering Practices	3	0	0	3	40	60	100
13.	Physics	26PHX601	Nano Science and Technology	3	0	0	3	40	60	100
14.	Physics	26PHX602	Nano Electronics and Photonics	3	0	0	3	40	60	100
15.	Mathematics	26MAX601	Essential Statistical Techniques for Data Science	3	0	0	3	40	60	100
16.	Mathematics	26MAX602	Optimization Methods and Applications.	3	0	0	3	40	60	100
17.	English	26ENX601	English for Digital media	3	0	0	3	40	60	100
18.	MBA	26PMX601	Stress Management	3	0	0	3	40	60	100
19.	MBA	26PMX602	AI in Human Resource Management	3	0	0	3	40	60	100
20.	MBA	26PMX603	Ethical values of business	3	0	0	3	40	60	100

21.	MBA	26PMX604	Entrepreneurship Development	3	0	0	3	40	60	100
-----	-----	----------	------------------------------	---	---	---	---	----	----	-----

LIST OF OPEN ELECTIVES NPTEL

S. No	Course Title
1.	Fundamentals of Semiconductor Devices
2.	Principles of Communication Systems – I
3.	Introduction to Machine Learning
4.	Introduction to Artificial Intelligence
5.	Smart Materials and Structures
6.	Cryogenic Engineering
7.	EV Essentials
8.	Introduction to Green Energy Technologies
9.	Cryptography and Network Security
10.	Introduction to Database Concepts
11.	Data Analytics with Python
12.	Social Networks
13.	Entrepreneurship Essentials
14.	United Nations Sustainable Development Goals (UN SDGs)
15.	Energy and the Climate Crisis: The Path to Net-Zero Emissions
16.	Elements of Literature and Creative Communication

***Course titles are subject to change as per NPTEL/SWAYAM schedule.**

***Only 12-week courses are considered for 3 credits.**

LIST OF MANDATORY COURSES

S. No	Course Code	Course Title	Hours / Week			Credits
			L	T	P	
1	26MC1001	Indian Constitution	1	0	0	0
2	26MC1002	Environmental Science	1	0	0	0
3	26MC2001	Indian Knowledge Systems	1	0	0	0

Credit Summary

Sl.No	Category	Credits/Semester								Credits	Credit %
		I	II	III	IV	V	VI	VII	VIII		
1	HS	3	4	2	2			4		15	9.32
2	BS	4	8.5	4						16.5	10.25
3	ES	9	7.5							16.5	10.25
4	PC		2	16	22	22	8			70	43.48
5	PE					3	6	6		15	9.32
6	OE						3	3		6	3.73
7	PW						2	2	8	12	7.45
8	CEC	1		1	2	1	2	3		10	6.21
9	MC									-	-
	Total	17	22	23	26	26	21	18	8	161	100.00

Total Number of Credits:161