Department of Computer Science and Engineering (Cyber Security)

[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	HS	26EN1101	Professional English	3	0	0	3	40	60	100
2	HS	26HS1101	தமிழர்மரபு / Heritage of Tamils	1	0	0	1	40	60	100
3	BS	26MA1201	Matrices and Calculus	3	1	0	4	40	60	100
4	ES	26CS1301	Problem Solving using C Programming	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
5	BS	26PH1203	Physics for Information Science	3	0	3	4.5	50	50	100
6	ES	26AD1301	Essentials of Computing	3	0	2	4	50	50	100
LABORATORY COURSES										
7	ES	26CS1L01	Problem Solving using C Programming Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
8	CEC	26CD1X01	Communication Skills	1	0	0	1	100		100
MANDATORY COURSES										
9	MC	26MCXXXX	Mandatory Course	1	0	0	0	-	-	-
TOTAL CREDITS:				**22.5**						

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Sl. No	Category	Course Code	Course Title	Hours/ Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER II										
THEORY COURSES										
1	HS	26HS2101	தமிழர்களும் தொழில்நுட்பமும் / Tamils and Technology	1	0	0	1	40	60	100
2	HS	26HS1102	Universal Human Values	2	0	0	2	40	60	100
3	BS	26MA2201	Applied Linear Algebra	3	1	0	4	40	60	100
4	ES	26CY2301	Essentials of Cyber Security	3	0	0	3	40	60	100
5	ES	26EC2302	Digital Principles and Computer Organization	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
6	ES	26IT2301	Python Programming	3	0	3	4.5	50	50	100
LABORATORY COURSES										
7	PC	26CY2L01	Design Thinking Laboratory	0	0	4	2	60	40	100
8	HS	26EN2L01	English Language Proficiency Laboratory	0	0	4	2	60	40	100
MANDATORY COURSES										
9	MC	26MCXXXX	Mandatory Course	1	0	0	0	-	-	-
TOTAL CREDITS:				**21.5**						

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Sl. No	Category	Course Code	Course Title	Hours/ Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER III										
THEORY COURSES										
1	HS	26HS3101	Climate Change and Sustainability	2	0	0	2	40	60	100
2	BS	26MA3201	Discrete Mathematical Structures	3	1	0	4	40	60	100
3	PC	26CY3401	Data Base Management Systems	3	0	0	3	40	60	100
4	PC	26CY3402	Cryptography	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
5	PC	26CY3403	Data Structures	3	0	2	4	50	50	100
6	PC	26CY3404	Object Oriented Programming using C++	2	0	4	4	50	50	100
LABORATORY COURSES										
7	PC	26CY3L01	Data Base Management Systems Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
8	CEC	26CD3X01	Logical & Analytical Thinking	1	0	0	1	100	-	100
TOTAL CREDITS:				**23**						

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Sl. No	Category	Course Code	Course Title	Hours/ Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER IV										
THEORY COURSES										
1	PC	26CY4401	Design and Analysis of Algorithms	3	0	0	3	40	60	100
2	PC	26CY4402	Operating Systems	3	0	0	3	40	60	100
3	PC	26CY4403	Software Engineering	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
4	PC	26CY4404	Java Programming	3	0	2	4	50	50	100
5	PC	26CY4405	Computer Networks	3	0	2	4	50	50	100
6	PC	26CY4406	Artificial Intelligence	3	0	2	4	50	50	100
CAREER ENHANCEMENT COURSES										
7	CEC	26CD4X01	Advanced Aptitude and Reasoning	1	0	0	1	100		100
8	CEC	26VAXXXX	Skill Development Course I	1	0	0	1	100		100
TOTAL CREDITS:				**23**						

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Sl. No	Category	Course Code	Course Title	Hours/ Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER V										
THEORY COURSES										
1	PC	26CY5401	Theory of Computation	3	1	0	4	40	60	100
2	PC	26CY5402	Machine Learning	3	0	0	3	40	60	100
3	PC	26CY5403	Cyber Threat Intelligent	3	0	0	3	40	60	100
4	PC	26CY5404	Web Technology	3	0	0	3	40	60	100
5	PE	26XX55XX	Professional Elective-I	3	0	0	3	40	60	100
6	PE	26XX55XX	Professional Elective-II	3	0	0	3	40	60	100
LABORATORY COURSES										
7	PC	26CY5L01	Machine Learning Laboratory	0	0	4	2	60	40	100
8	PC	26CY5L02	Web Technology Laboratory	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
9	CEC	26CD5X01	Professional Coding for Career Development	1	0	0	1	100	-	100
TOTAL CREDITS:				**24**						

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Sl. No	Category	Course Code	Course Title	Hours/ Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER VI										
THEORY COURSES										
1	PC	26CY6401	Cyber Forensics	3	0	0	3	40	60	100
2	PC	26CY6402	Quantum Cryptography	3	0	0	3	40	60	100
3	PE	26XX65XX	Professional Elective-III	3	0	0	3	40	60	100
4	OE	26XX66XX	Open Elective-I	3	0	0	3	40	60	100
THEORY COURSES WITH LABORATORY COMPONENT										
5	PC	26CY6403	Blockchain Technology	3	0	2	4	50	50	100
6	PC	26CY6404	Ethical Hacking	3	0	2	4	50	50	100
PROJECT WORK										
7	PW	26CY6701	Multidisciplinary Mini Project	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
8	CEC	26CD6X01	Advanced Programming Skills	1	0	0	1	100	-	100
9	CEC	26VAXXXX	Skill Development Course – II	1	0	0	1	100	-	100
TOTAL CREDITS:				**24**						

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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	PE	26XX75XX	Professional Elective-IV	3	0	0	3	40	60	100
3	PE	26XX75XX	Professional Elective-V	3	0	0	3	40	60	100
4	OE	26XX76XX	Open Elective-II	3	0	0	3	40	60	100
PROJECT WORK										
6	PW	26CY7701	Project Work I	0	0	4	2	60	40	100
CAREER ENHANCEMENT COURSES										
7	CEC	26CD7X01	Career Readiness & Employability Skills	1	0	0	1	100	-	100
8	CEC	26INXXXX	Internship	0	0	4	2	100	-	100
TOTAL CREDITS:				**16**						

Sl. No	Category	Course Code	Course Title	Hours/ Week			Credits	Maximum Marks		
				L	T	P		CIA	ESE	Total
SEMESTER VIII										
PROJECT WORK										
1.	PW	26CY8701	Project Work II	0	0	16	8	60	40	100
TOTAL CREDITS:				**8**						

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LIST OF PROFESSIONAL ELECTIVES

Sl. No	Category	Course Code	Course Name	L	T	P	Credits	CIA	ESE	Total
Vertical 1: AI and Machine Learning										
1	PE	26AMX501	Knowledge Representation and Reasoning	3	0	0	3	40	60	100
2	PE	26AMX502	Recommendation Systems	3	0	0	3	40	60	100
3	PE	26AMX503	Soft Computing	3	0	0	3	40	60	100
4	PE	26AMX504	Computer Vision	3	0	0	3	40	60	100
5	PE	26AMX505	Human Computer Interaction	3	0	0	3	40	60	100
6	PE	26AMX506	Business Intelligence Analytics	3	0	0	3	40	60	100
7	PE	26AMX507	Robotic Process Automation	3	0	0	3	40	60	100
8	PE	26AMX508	Information Visualization	3	0	0	3	40	60	100
Vertical 2: Data Analytics										
1	PE	26ADX501	Search Methods for Problem Solving	3	0	0	3	40	60	100
2	PE	26ADX502	Image and Video Analytics	3	0	0	3	40	60	100
3	PE	26ADX503	Web and Social Media Analytics	3	0	0	3	40	60	100
4	PE	26ADX504	Predictive Analytics	3	0	0	3	40	60	100
5	PE	26ADX505	Stream Data Analytics	3	0	0	3	40	60	100
6	PE	26ADX506	Social Network Analysis and Security	3	0	0	3	40	60	100

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7	PE	26ADX507	Statistical Learning for Data Science	3	0	0	3	40	60	100
8	PE	26ADX508	Learning Analytical Tools	3	0	0	3	40	60	100
Vertical 3: Fundamentals of IOT										
1.	PE	26CSX501	Fundamentals of IoT	3	0	0	3	40	60	100
2	PE	26CSX502	Sensors and Actuators for IoT	3	0	0	3	40	60	100
3	PE	26CSX503	IoT Networking & Communication	3	0	0	3	40	60	100
4	PE	26CSX504	IoT Cloud Platforms	3	0	0	3	40	60	100
5	PE	26CSX505	Communication Protocols for IoT	3	0	0	3	40	60	100
6	PE	26CSX506	IoT Analytics	3	0	0	3	40	60	100
7	PE	26CSX507	Industrial IoT	3	0	0	3	40	60	100
8	PE	26CSX508	IoT in 5G Networks	3	0	0	3	40	60	100
Vertical 4: Security And Privacy										
1	PE	26CYX501	Information Security	3	0	0	3	40	60	100
2	PE	26CYX502	Modern Cryptography	3	0	0	3	40	60	100
3	PE	26CYX503	Security in Communication Networks	3	0	0	3	40	60	100
4	PE	26CYX504	Malware analysis	3	0	0	3	40	60	100
5	PE	26CYX505	Hardware Security	3	0	0	3	40	60	100
6	PE	26CYX506	Cyber threat for IoT and Cloud	3	0	0	3	40	60	100
7	PE	26CYX507	Secure Coding	3	0	0	3	40	60	100
8	PE	26CYX508	Mobile Application Security	3	0	0	3	40	60	100
Vertical 5: Cloud Essentials										
1.	PE	26ITX501	Data Warehousing & Mining	3	0	0	3	40	60	100

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2	PE	26ITX502	Cloud Computing	3	0	0	3	40	60	100
3	PE	26ITX503	Distributed Systems	3	0	0	3	40	60	100
4	PE	26ITX504	Cloud Application Development and Deployment	3	0	0	3	40	60	100
5	PE	26ITX505	Devops	3	0	0	3	40	60	100
6	PE	26ITX506	Edge Computing	3	0	0	3	40	60	100
7	PE	26ITX507	Cloud Data Centric Networking	3	0	0	3	40	60	100
8	PE	26ITX508	Serverless Computing	3	0	0	3	40	60	100
Vertical 6: Emerging Technologies										
1.	PE	26CSX509	Deep Learning and Neural Networks	3	0	0	3	40	60	100
2	PE	26CSX510	Agentic AI	3	0	0	3	40	60	100
3	PE	26CSX511	Blockchain Architecture and Design	3	0	0	3	40	60	100
4	PE	26CSX512	Large Language Models	3	0	0	3	40	60	100
5	PE	26CSX513	Augmented and virtual reality	3	0	0	3	40	60	100
6	PE	26CSX514	Federated Learning	3	0	0	3	40	60	100
7	PE	26CSX515	Explainable AI	3	0	0	3	40	60	100
8	PE	26CSX516	Quantum Computing	3	0	0	3	40	60	100

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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

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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

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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.**

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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	Indian Knowledge Systems	1	0	0	0
3	26MC2001	Environmental Science	1	0	0	0

CREDIT SUMMARY

S.No	Category	Credits/Semester								Credits	Credits %
		I	II	III	IV	V	VI	VII	VIII		
1	HS	4	5	2				2		13	**8%**
2	BS	8.5	4	4						16.5	**10%**
3	ES	9	10.5							19.5	**12%**
4	PC		2	16	21	17	14			70	**43%**
5	PE					6	3	6		15	**9%**
6	OE						3	3		6	**4%**
7	PW						2	2	8	12	**8%**
8	CEC	1		1	2	1	2	3		10	**6%**
9	MC	NC	NC	-	-	-	-	-	-	-	-
	Total	**22.5**	**21.5**	**23**	**23**	**24**	**24**	**16**	**8**	**162**	**100%**

Total Number of Credits: 162

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HS-Humanities& Science; BS-Basic Science; EC-Engineering Science; PC-Professional Core; PE-Professional Elective; OE-Open Elective

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