SHIV NADAR
UNIVERSITY
CHENNAI

SSN School of Engineering

DEPARTMENT OF INFORMATION TECHNOLOGY

Master of Technology
Information Technology

CURRICULUM

REGULATIONS 2026

VISION of the Department

To be an outstanding center for IT education and research for betterment of society.

MISSION of the Department

1. Impart sound knowledge of IT domains to the students.
2. Nurture students to contribute to dynamic industrial needs.
3. Empower faculty with the knowledge in the emerging areas of IT.
4. Promote sustained research to build information systems for the benefit of society

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Graduates will be competent Artificial Intelligence and Data Science practitioners and leaders, effectively addressing complex technological challenges in various industries and research domains.

PEO 2: Graduates will be innovative professionals or entrepreneurs, actively involved in the development, deployment, and implementation of cutting-edge AI and Data Science technologies and solutions.

PEO 3: Graduates will conduct their professional activities with a strong sense of ethical responsibility and social awareness, contributing positively to the well-being of society and the environment.

PEO 4: Graduates will collaborate effectively with professionals from diverse disciplines in industry and academia, leveraging their AI and Data Science expertise to foster interdisciplinary solutions and contribute to economic advancement.

PROGRAM OUTCOMES (POs)

PO1. An ability to independently carry out research /investigation and development work to solve practical problems.

PO2. An ability to write and present a substantial technical report/document.

PO3. Students should be able to demonstrate a degree of mastery over the area as per specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1. An ability to apply modern IT tools and techniques to solve engineering problems, and provide sustainable development in societal and environmental contexts, while following ethical engineering practices.

PSO2. An ability to demonstrate an understanding of engineering and management principles along with an ability to adapt to technological changes towards execution and management of projects, either as an individual or as a team member.

PSO3. Design, develop and deploy artificial intelligence-based software-intensive solutions, by applying acquired knowledge of IT and allied thrust areas, and by conducting research-based investigations.

PEO / PO-PSO Mapping

PEO/PO	PO1	PO2	PO3	PSO1	PSO2	PSO3
PEO1	2	2	3	3	2	3
PEO2	3	2	3	3	2	3
PEO3	2	3	1	2	2	2
PEO4		2		3	1	1

COURSE SUMMARY

The listed courses in the curriculum are broadly classified as per the recommendations from the UGC.

Sl. No	Broad Category of Course	Minimum Credit Requirement
1	Department Core Course (DC)	10
2	Major Core Course (MC)	30
3	Multidisciplinary Course (MD)	10
4	Open Elective (OE)	2
5	Project Dissertation (PD)	20
6	Research Internship (RI)	4
5	Skill Enhancement Course (SEC)	4
Total		**80**

The semester wise credit breakup of the Curriculum based on the above credit breakup is as follows:

Semester\Category	DC	MC	MD	OE	PD	RI	SEC	TOTAL
I	**7**	**8**	**4**	**2**	**-**	**-**	**2**	**23**
II	**3**	**14**	**3**	**-**	**-**	**-**	**2**	**22**
III	**-**	**8**	**3**	**-**	**8**	**4**	**-**	**23**
IV	**-**	**-**	**-**	**-**	**12**	**-**	**-**	**12**
Total	**10**	**30**	**10**	**2**	**20**	**4**	**4**	**80**

SEMESTER I

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Mathematical Foundations for AI and ML	MD	5	30	15	30	45	120	4
2		Design and Analysis of Concurrent Structures and Algorithms	DC	5	45	0	30	45	120	4
3		Advanced Artificial Intelligence	DC	3	45	0	0	45	90	3
4		Machine Learning for Multimodal Data	MC	5	45	0	30	45	120	4
5		Elective 1	MC	5	45	0	30	45	120	4
6		Research Methodology / IPR/Operations Research	OE	4	30	0	30	0	60	2
7		Linux essentials	SEC	3	15	0	30	15	60	2
TOTAL				**29**	**255**	**15**	**180**	**240**	**690**	**23**

SEMESTER II

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Elective 2	MD	4	30	0	30	30	90	3
2		Data Engineering and Management	DC	4	30	0	30	30	90	3
3		Deep Learning for Computer Vision	MC	5	45	0	30	45	120	4
4		Social Networks & Open-Source Intelligence	MC	5	45	0	30	45	120	4
5		Elective 3	MC	4	30	0	30	30	90	3
6		Elective 4	MC	4	30	0	30	30	90	3
7		DevOps	SEC	3	0	15	30	15	60	2
TOTAL				**29**	**210**	**15**	**210**	**225**	**660**	**22**

SEMESTER III

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Multi-disciplinary Open Elective	MD	3	45	0	0	45	90	3
2		Elective 5	MC	5	45	0	30	45	120	4
3		Elective 6	MC	5	45	0	30	45	120	4
PRACTICALS										
4		Project/Dissertation Phase I	PD	16	0	0	0	120	120	8
5		Research Internship	RI		0	0	0	120	120	4
TOTAL				**29**	**135**	**0**	**60**	**375**	**570**	**23**

SEMESTER IV

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
PRACTICALS										
1		Project/Dissertation Phase II	PD	24	0	0	180	180	360	12
TOTAL				**24**	0	0	180	180	360	**12**

ELECTIVE 1

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Deep Learning for Language and Speech Technology	MC	5	45	0	30	45	120	4
2		Data Visualization and Analytics	MC	5	45	0	30	45	120	4

ELECTIVE 2

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Elements of Statistical Learning	MD	4	30	0	30	30	90	3
2		Optimization Techniques for ML	MD	4	30	0	30	30	90	3

ELECTIVE 3

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Reinforcement Learning Techniques	MC	4	30	0	30	30	90	3
2		Generative Artificial Intelligence	MC	4	30	0	30	30	90	3
3		Responsible Artificial Intelligence	MC	4	30	0	30	30	90	3
4		Generative Artificial Intelligence	MC	4	30	0	30	30	90	3

ELECTIVE 4

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Blockchain Systems and Applications	MC	4	30	0	30	30	90	3
2		Ethical Hacking	MC	4	30	0	30	30	90	3
3		Cyber Forensics	MC	4	30	0	30	30	90	3
4		Data Privacy	MC	4	30	0	30	30	90	3

ELECTIVE 5

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		IoT Programming	MC	5	45	0	30	45	120	4
2		IoT Architectures and Software-Defined Networking	MC	5	45	0	30	45	120	4
3		IoT Projects	MC	5	45	0	30	45	120	4

ELECTIVE 6

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Full Stack Web Application Development	MC	5	45	0	30	45	120	4
2		Mobile Application Development	MC	5	45	0	30	45	120	4
3		Cloud and Edge Computing for ML Applications	MC	5	45	0	30	45	120	4

MULTI-DISCIPLINARY OPEN ELECTIVE

S. No.	COURSE CODE	COURSE TITLE	COURSE CATEGORY	CONTACT PERIODS	Teaching and Learning Scheme (per semester)					
					L	T	P	TW& SL#	TH	C
1		Cloud and Edge Computing	MD	3	45	0	0	45	90	3
2		Database and Applications	MD	3	45	0	0	45	90	3
3		Image Processing and Computer Vision	MD	3	45	0	0	45	90	3

Note: Students from M.Tech. Information Technology must not opt for this Open Elective.

L - Lecture, **T** - Tutorial, **P** - Practical, TW & SL – Term Work & Self Learning, TH – Total Hours and **C** – Credits