

Annexure – VII

Course Scheme of M.Tech.(Computer Science and Technology)

Batch 2024 – 25

NEP 2020 Implementation in M.Tech – CST

S. No.	Certification Type	Stage of Exit	Programme duration	Mandatory credits to be secured for the certification
1	Postgraduate Certificate in Computer Science & Technology	For those who exit after the first semester of the post graduate programme.	6 months of the post graduate programme	20
2	Postgraduate Diploma in Computer Science & Technology	For those who exit after one year (2 semesters) of the postgraduate programme.	One year or 2 semesters of the postgraduate programme and Four Weeks Mandatory Apprenticeship/Internship after first year (within one year) with satisfactory grade. The candidate may opt in-house/industry/other-HEI for the same.	40
3	Master of Technology in Computer Science & Technology	For those who exit after two years (4 semesters) of the postgraduate programme	Two years or 4 semesters of the post graduate programme	80

Semester – I

Course Code	Course Title	Credit	MID	END	CIA	Total
Core courses						
MCST1C001T	Advanced Data Structures & Algorithms	3	22.5	37.5	15	75
MCST1C002T	Data Communication and Computer Networks	3	22.5	37.5	15	75
MCST1C001L	Advanced Data Structures & Algorithms Lab.	1	7.5	12.5	5	25
Open Elective Pool – I (Any One)						
MCST1O001T	Cloud Computing and Architectures	4	30	50	20	100
MCST1O002T	Information Security					
MCST1O003T	Artificial Intelligence and Machine Learning					
MCST1O004T	Modelling Simulation & Optimization					
Open Elective Pool – II (Any One)						
MCST1O005T	Soft Computing	4	30	50	20	100
MCST1O006T	Mobile Applications Development					
MCST1O007T	Digital Image Processing					
MCST1O008T	Scientific Computing					
MOOC Course						
MOOC	MOOC course available on SWAYAM/NPTEL (PG level course available online during the semester)	3	-	-		75
Skill Course/Audit Course						
MCST1C003T	Soft Skills	2	15	25	10	50
MCST1C004T	*Environmental Studies	0	15	25	10	50
Total		20	-	-		500

***Students will have to pass the exam, however no credits will be given to audit course**

Semester – II

Course Code	Course Title	Credit	MID	END	CIA	Total
Core courses						
MCST1C005T	Advanced Database Management Systems	3	22.5	37.5	15	75
MCST1C006T	Advanced Software Design, Development and Testing	3	22.5	37.5	15	75
MCST1C002L	Advanced Database Management Systems Lab.	1	7.5	12.5	5	25
Open Elective Pool – III Course (Any One)						
MCST1O009T	Network & Cyber Security	4	30	50	20	100
MCST1O010T	Big Data Analytics					
MCST1O011T	Computing Systems for Robotics					
MCST1O012T	Agile Software Development					
Open Elective Pool – IV Course (Any One)						
MCST1O013T	Wireless Sensor Networks	4	30	50	20	100
MCST1O014T	Data Warehousing and Mining					
MCST1O015T	Computer Vision					
MCST1O016T	Advanced Object Oriented Programming					
MOOC Course						
MOOC	MOOC course available on SWAYAM/NPTEL (PG level course available online during the semester)	3	-	-		75
Skill Course/Audit Course						
MSCT1C007T	Research Methodology	2	15	25	10	50
MCST1O008T	*Research Ethics and IPR	0	15	25	10	50
Total		20	-	-		500

***Students will have to pass the exam, however no credits will be given to audit course**

Semester – III

Course Code	Course Title	Credit	Internal	External	Max. Marks
Core courses					
MCST2C001D	Dissertation – Part I	20	250	250	500
Total		20	-	-	500

Semester – IV

Course Code	Course Title	Credit	Internal	External	Max. Marks
Core courses					
MCST2C002D	Dissertation – Part II	20	250	250	500
Total		20	-	-	500

***The second year of the M.Tech. Programme will be dedicated to research work where a student may opt in-house or industry to undertake their respective dissertation. The allocation of industry and research problem selection shall be decided by the HoD. The candidate if opt for industry shall be continuously monitored by the internal supervisor and candidate shall not engage in any work/service/job other than his or her M. Tech. research work.**

****There shall be a mandatory research publication/acceptance in Scopus indexed Journal/Conference/Book Chapters for submission of M.Tech. Dissertation.**

***** The distribution of Internal and External Marks in 3rd and 4th semester are given in Appendix-A and B.**

Course Scheme of M.Tech.(Computer Science and Technology) Cyber Security
Batch 2024 – 25

NEP 2020 Implementation in M.Tech – CST (Cyber Security)

S. No.	Certification Type	Stage of Exit	Programme duration	Mandatory credits to be secured for the certification
1	Postgraduate Certificate in Cyber Security	For those who exit after the first semester of the post graduate programme.	6 months of the post graduate programme	20
2	Postgraduate Diploma in Cyber Security	For those who exit after one year (2 semesters) of the postgraduate programme.	One year or 2 semesters of the postgraduate programme and Four Weeks Mandatory Apprenticeship/Internship after first year (within one year) with satisfactory grade. The candidate may opt in-house/industry/other-HEI for the same.	40
3	Master of Technology in Computer Science & Technology (Cyber Security)	For those who exit after two years (4 semesters) of the postgraduate programme	Two years or 4 semesters of the post graduate programme	80

Semester – I

Course Code	Course Title	Credit	MID	END	CIA	Total
Core courses						
MCSC1C001T	Information and network security	3	22.5	37.5	15	75
MCSC1C002T	Artificial Intelligence	3	22.5	37.5	15	75
MCSC1C001L	Information and network security Lab	1	7.5	12.5	5	25
Open Elective Pool – I (Any One)						
MCSC1O001T	Cybersecurity risk and incident management	4	30	50	20	100
MCSC1O002T	Cyber Security Project Management					
MCSC1O003T	Cybersecurity laws and Ethics					
MCSC1O004T	Secure Software Engineering					
Open Elective Pool – II(Any One)						
MCSC1O005T	Secure Internet of Things	4	30	50	20	100
MCSC1O006T	Cyber Physical Systems Security					
MCSC1O007T	Forensic Legalities					
MCSC1O008T	Intrusion Detection Systems and Firewall					
MOOC Course						
MOOC	MOOC course available on SWAYAM/NPTEL (PG level course available online during the semester)	3	-	-		75
Skill Course/Audit Course						
MCSC1C003T	Soft Skills	2	15	25	10	50
MCSC1C004T	*Environmental Studies	0	15	25	10	50
Total		20	-	-		500

***Students will have to pass the exam, however no credits will be given to audit course**

Semester – II

Course Code	Course Title	Credit	MID	END	CIA	Total
Core courses						
MCSC1C005T	Critical Infrastructure Vulnerability Assessment and Mitigation	3	22.5	37.5	15	75
MCSC1C006T	Ethical Hacking and Defence	3	22.5	37.5	15	75
MCSC1C002L	Critical Infrastructure Vulnerability Assessment and Mitigation Lab	1	7.5	12.5	5	25
Open Elective Pool – III Course (Any One)						
MCSC1O009T	Digital Forensic	4	30	50	20	100
MCSC1O010T	Emerging Cyber Security Threats					
MCSC1O011T	Secure Wireless Sensor Networks					
MCSC1O012T	Cyber Policy and Governance					
Open Elective Pool – IV Course (Any One)						
MCSC1O013T	Cryptography	4	30	50	20	100
MCSC1O014T	Machine Learning and Security					
MCSC1O015T	Psychology of Cyber Criminal					
MCSC1O016T	Block Chain Architecture and Applications					
MOOC Course						
MOOC	MOOC course available on SWAYAM/NPTEL (PG level course available online during the semester)	3	-	-		75
Skill Course/Audit Course						
MCSC1C007T	Research Methodology	2	15	25	10	50
MCSC1C008T	*Research Ethics and IPR	0	15	25	10	50
Total		20	-	-		500

***Students will have to pass the exam, however no credits will be given to audit course**

Semester – III

Course Code	Course Title	Credit	Internal	External	Max. Marks
Core courses					
MCSC2C001D	Dissertation – Part I	20	250	250	500
Total		20	-	-	500

Semester – IV

Course Code	Course Title	Credit	Internal	External	Max. Marks
Core courses					
MCSC2C002D	Dissertation – Part II	20	250	250	500
Total		20	-	-	500

***The second year of the M.Tech. Programme will be dedicated to research work where a student may opt in-house or industry to undertake their respective dissertation. The allocation of industry and research problem selection shall be decided by the HoD. The candidate if opt for industry shall be continuously monitored by the internal supervisor and candidate shall not engage in any work/service/job other than his or her M. Tech. research work.**

****There shall be a mandatory research publication/acceptance in Scopus indexed Journal/Conference/Book Chapters for submission of M.Tech. Dissertation.**

***** The distribution of Internal and External Marks in 3rd and 4th semester are given in Appendix-A and B.**