

ACADEMIC CURRICULA
UNDERGRADUATE/ INTEGRATED
POST GRADUATE DEGREE
PROGRAMMES

(With exit option of Diploma)

(Choice Based Flexible Credit System)

Regulations 2021

Volume – 1

(Revised on July 2024)



SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)

Kattankulathur, Chengalpattu District 603203,

Tamil Nadu, India

51. Integrated M.Tech. in Computer Science and Engineering with Specialization in Cyber Security & Digital Forensics

51. (a) Mission of the Department

Mission Stmt – 1	To impart knowledge in cutting edge Computer Science and Engineering technologies in par with industrial standards.
Mission Stmt – 2	To collaborate with renowned academic institutions to uplift innovative research and development in Computer Science and Engineering and its allied fields to serve the needs of society
Mission Stmt – 3	To demonstrate strong communication skills and possess the ability to design computing systems individually as well as part of a multidisciplinary teams.
Mission Stmt – 4	To instill societal, safety, cultural, environmental, and ethical responsibilities in all professional activities
Mission Stmt – 5	To Identify and address the Knowledge, Professional Skills, Professional Aptitude in the field of Cyber security

51. (b) Program Educational Objectives (PEO)

PEO – 1	Graduates will be able to perform in technical/managerial roles ranging from design, development, problem solving to production support in software industries and R&D sectors.
PEO – 2	Graduates will be able to successfully pursue higher education in reputed institutions.
PEO – 3	Graduates will have the ability to adapt, contribute and innovate new technologies and systems in the key domains of Computer Science and Engineering.
PEO – 4	Graduates will be ethically and socially responsible solution providers and entrepreneurs in Computer Science and other engineering disciplines.
PEO – 5	Graduates will be able to obtain Job orientations / proficiencies / skills in the field of cyber security and digital forensics.

51. (c) Mission of the Department to Program Educational Objectives (PEO) Mapping

	Mission Stmt. - 1	Mission Stmt. - 2	Mission Stmt. - 3	Mission Stmt. - 4	Mission Stmt. - 5
PEO - 1	3	-	-	-	1
PEO - 2	-	-	2	-	-
PEO - 3	-	3	3	-	-
PEO - 4	-	-	-	2	3
PEO - 5	-	-	-	3	-

3 – High Correlation, 2 – Medium Correlation, 1 – Low Correlation

51. (d) Mapping Program Educational Objectives (PEO) to Program Outcomes (PO)

	Program Outcomes (PO)												Program Specific Outcomes (PSO)		
	1	2	3	4	5	6	7	8	9	10	11	12	PSO-1	PSO-2	PSO-3
	Engineering Knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern Tool Usage	The engineer and society	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning			
PEO - 1	3	-	-	1	-	2	-	3	2	3	-	-	-	-	2
PEO - 2	-	2	2	-	3	-	3	2	-	-	-		2	-	-
PEO - 3	-	3	3	2	-	-	-	-	-	2	-	3	-	2	-
PEO - 4	-	2	3	-	-	3	2	-	2	-	2	2	-	2	-
PEO - 5	-	-	-	-	-	3	-	-	3	3	3	3	-	-	3

3 – High Correlation, 2 – Medium Correlation, 1 – Low Correlation

PSO – Program Specific Outcomes (PSO)

PSO - 1	To understand, analyze, design, and develop computing solutions by applying fundamental concepts of computer science and engineering.
PSO - 2	To apply computing principles, skills and practices to develop solutions using logical and reasoning skills, for real life problems.
PSO - 3	To identify and utilize cyber security principles to create secure infrastructure

51. (e) Program Structure: Integrated M.Tech. in Computer Science and Engineering with Specialization in Cyber Security & Digital Forensics

Humanities & Social Sciences including Management Courses (H)						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21LEH101T	Communicative English	2	1	0	3	
21LEH102T	Chinese	2	1	0	3	
21LEH103T	French					
21LEH104T	German					
21LEH105T	Japanese					
21LEH106T	Korean					
21LEH107T	Spanish					
21LEH108T	Russian					
21GNH101J	Philosophy of Engineering	1	0	2	2	
21PDH209T ¹	Social Engineering	2	0	0	2	
21GNH401T	Behavioral Psychology	2	1	0	3	
Total Credits 13						
Engineering Science Courses (S)						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21EES101T	Electrical and Electronics Engineering	3	1	0	4	
21MES101L ¹	Basic Civil and Mechanical Workshop	0	0	4	2	
21MES102L ¹	Engineering Graphics and Design	0	0	4	2	
21CSS101J	Programming for Problem Solving	3	0	2	4	
21CSS201T	Computer Organization and Architecture	3	1	0	4	
21DCS201P ¹	Design Thinking and Methodology	1	2	0	3	
21CSS303T	Data Science	2	0	0	2	
Total Credits 21						
Non Credit Courses (M)						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21PDM101L ¹	Professional Skills and Practices	0	0	2	0	
21PDM102L ¹	General Aptitude	0	0	2		
21PDM201L ¹	Verbal Reasoning	0	0	2		
21PDM202L ¹	Critical and Creative Thinking Skills	0	0	2		
21PDM301L ¹	Analytical and Logical Thinking Skills	0	0	2		
21PDM302L ¹	Employability Skills and Practices	0	0	2		
21CYM101T ¹	Environmental Science	1	0	0		0
21LEM101T ¹	Constitution of India	1	0	0	0	
21LEM102T ¹	Universal Human Values – Introduction	1	0	0	0	
21LEM201T ¹	Professional Ethics	1	0	0	0	
21LEM202T ¹	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	2	1	0	3	
21LEM301T ¹	Indian Art Form	1	0	0	0	
21LEM302T ¹	Indian Traditional Knowledge	1	0	0	0	
21GNM101L ¹	Physical and Mental Health using Yoga	0	0	2	0	
21GNM102L ¹	National Service Scheme					
21GNM103L ¹	National Cadet Corps					
21GNM104L ¹	National Sports Organization					
Total Credits 03						

Basic Science Courses (B)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21PYB102J	Semiconductor Physics and Computational Methods	3	1	2	5	
21CYB101J	Chemistry	3	1	2	5	
21MAB101T	Calculus and Linear Algebra	3	1	0	4	
21MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4	
21MAB206T	Numerical Methods and Analysis	3	1	0	4	
21MAB302T	Discrete Mathematics	3	1	0	4	
21MAB204T	Probability and Queuing Theory	3	1	0	4	
21BTB102T	Introduction to Computational Biology	2	0	0	2	
Total Credits 32						
Professional Core Courses (C)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21CSC101T	Object Oriented Design and Programming	2	1	0	3	
21CSC201J	Data Structures and Algorithms	3	0	2	4	
21CSC202J	Operating Systems	3	0	2	4	
21CSC203P ¹	Advanced Programming Practice	3	1	0	4	
21CSC204J	Design and Analysis of Algorithms	3	0	2	4	
21CSC205P ¹	Database Management Systems	3	1	0	4	
21CSC206T	Artificial Intelligence	2	1	0	3	
21CSC301T	Formal Language and Automata	3	0	0	3	
21CSC302J	Computer Networks	3	0	2	4	
21CSC303J	Software Engineering and Project Management	2	0	2	3	
21CSC310J	Malware Analysis	2	0	2	3	
21CSC308T	Security Risk Management Principles	3	0	0	3	
21CSC503T	Security Service Management	3	1	0	4	
21CSC504J	Android Malware Analysis	3	0	2	4	
21IPC501J ²	Research Methodology	2	1	2	4	
Total Credits 54						
Open Elective Courses (O) (Any 4 courses)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21CSO351T	Web Programming	2	1	0	3	
21CSO352T	Python Programming	2	1	0	3	
21CSO353T	Mobile Application Development	2	1	0	3	
21CSO354T	Data Analytics	2	1	0	3	
21CSO358T	Network Security	2	1	0	3	
21CSO359T	Fundamentals of Information System Security	2	1	0	3	
21CSO360T	Security Policy Implementation	2	1	0	3	
Total Credits 12						
Project Work, Seminar, Internship in Industry / Higher Technical Institutions (P)						

	Course Code	Course Title	Hours / Week				C
			L	T	P		
	21GNP301L ¹	Community Connect	0	0	2		1
	21CSP302L ¹	Project	0	0	6		3
	21CSP303T ¹	MOOC	3	0	0		
	21CSP401L	Major Project	0	0	30		15
	21CSP402L	Major Project	0	0	20		10
	21CSP403L	Internship#	0	0	10		5
	21CSP501L	Specialization Project	0	0	40		20
	21CSP502L	Specialization Project	0	0	30		15
	21CSP503L	Domain Internship	0	0	10		5
Total Credits							39

Professional Elective Courses (E) (Any 13 courses)							Professional Elective Courses (E)						
Course Code	Course Title	Hours / Week				C	Course Code	Course Title	Hours / Week				C
		L	T	P					L	T	P		
21CSE281T	Cryptography and Network Security	2	1	0	3		21CSE488T	Hacker Mind: Profiling the IT Criminal	2	1	0	3	
21CSE229J	Check Point System Administration	2	0	2	3		21CSE489T	Mobile and Wireless Security	2	1	0	3	
21CSE282T	Information Security	3	0	0	3		21CSE490J	Windows and Linux Internals	2	0	2	3	
21CSE283T	Cyber Law	2	1	0	3		21CSE491T	Cyber Crime and Digital Forensics	2	1	0	3	
21CSE381T	Forensics And Incident Response	2	1	0	3		21CSE492T	Cyber Crimes and Cyber Security	2	1	0	3	
21CSE382T	Security Management	2	1	0	3		21CSE531T	Cyber Security Operations	2	1	0	3	
21CSE383T	Security Governance, Risk and compliance	2	1	0	3		21CSE532T	Network Management and Protocols	2	1	0	3	
21CSE384J	Security Audit and Risk Assessment	2	0	2	3		21CSE533T	Firewalls and Access Controls	2	1	0	3	
21CSE385J	Advanced Malware Analysis	2	0	2	3		21CSE534T	Network Programming and Management	2	1	0	3	
21CSE386J	Penetration Testing and Vulnerability Assessment	2	0	2	3		21CSE535T	Network Intrusions and Computer Forensics	2	1	0	3	
21CSE387J	Hacker Techniques, Tools, and Incident Handling	2	0	2	3		21CSE536T	Mobile Forensics	2	1	0	3	
21CSE399J	Comprehensive Linux for All	2	0	2	3		21CSE537T	Digital Forensics	2	1	0	3	
21CSE485T	Database Security	2	1	0	3		21CSE538T	Security Scripting and Analysis	2	1	0	3	
21CSE486T	Operation System Security	2	1	0	3		21CSE539T	Principles of Secure Coding Principles	2	1	0	3	
21CSE487T	Cyberwarfare	2	1	0	3		21CSE540T	Android Security and Design Internals	2	1	0	3	
							Total Credits						
							39						



51. (f) **Programme Articulation: Integrated M.Tech. in Computer Science and Engineering with Specialization in Cyber Security & Digital Forensics**

Course Code	Course Name	Program Outcomes (PO)												PSO		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
		Engineering Knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern Tool Usage	The engineer and society	Environment & Sustainability	Ethics	Individual & Team Work	Communication	Project Mgt. & Finance	Life Long Learning	PSO-1	PSO-2	PSO-3
21CSS101J	Programming for Problem Solving	2	3	-	-	-	-	-	-	-	-	2	-	3	-	-
21CSS303T	Data Science	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
21CSS201T	Computer Organization and Architecture	3	2	-	-	-	-	-	-	-	-	-	-	1	2	1
21CSC201J	Data Structures and Algorithms	2	3	3	1	-	-	-	-	-	-	-	-	1	1	2
21CSC101T	Object Oriented Design and Programming	-	2	2	-	2	-	-	-	-	-	3	-	2	2	2
21CSC204J	Design and Analysis of Algorithms	2	1	2	1	-	-	-	-	-	3	-	3	3	1	-
21CSC202J	Operating Systems	3	3	3	2	-	-	-	-	-	-	-	3	2	-	-
21CSC303J	Software Engineering and Project Management	-	3	2	-	-	-	-	-	2	-	2	-	3	-	-
21CSC203P	Advanced Programming Practice	3	2	2	1	2	-	-	-	1	-	-	-	2	-	-
21CSC301T	Formal Language and Automata	2	2	2	-	-	-	-	-	-	-	-	-	-	3	-
21CSC302J	Computer Networks	3	-	-	2	3	-	-	-	-	-	-	-	1	-	-
21CSC205P	Database Management Systems	3	2	2	-	-	-	-	-	-	-	-	-	2	1	-
21CSC206T	Artificial Intelligence	1	2	3	-	-	-	-	-	-	-	-	-	1	2	-
21CSC310J	Malware Analysis		2					2			3		3			3
21CSC308T	Security Risk Management Principles		3			3						3				3
21CSC504J	Android Malware Analysis							2			3					3
21CSC308T	Security Risk Management Principles		3										2			3
21CSE281T	Cryptography and Network Security	2	2													3
21CSE282T	Information Security			2					2							3
21CSE283T	Cyber Law					2		2								3
21CSE229J	Check Point System Administration			2		2										3
21CSE381T	Forensics And Incident Response			2					2							3
21CSE382T	Security Management			2		2										3
21CSE383T	Security Governance, Risk and compliance	2	2		2											3
21CSE384J	Security Audit and Risk Assessment		2	2					2							3
21CSE385J	Advanced Malware Analysis		2	2		2										3
21CSE386J	Penetration Testing and Vulnerability Assessment		2	2		2	1									3
21CSE387J	Hacker Techniques, Tools, and Incident Handling		2			2										3
21CSE399J	Comprehensive Linux for All	3		2	2	3										3
21CSE485T	Database Security		2			2			2		2					3
21CSE486T	Operation System Security	2		3		3										3
21CSE487T	Cyberwarfare			2					2							3
21CSE488T	Hacker Mind: Profiling the IT Criminal			2		2						3				3
21CSE489T	Mobile and Wireless Security	2		3		3										3
21CSE490J	Windows and Linux Internals			2					2							3
21CSE491T	Cyber Crime and Digital Forensics	2		3		3										3
21CSE492T	Cyber Crimes and Cyber Security		2	2					2							3
21CSE531T	Cyber Security Operations		2					2			3		3			3
21CSE532T	Network Management and Protocols		3			3						3				3
21CSE533T	Firewalls and Access Controls							2			3					3
21CSE534T	Network Programming and Management		3										2			3
21CSE535T	Network Intrusions and Computer Forensics	2	2													3
21CSE536T	Mobile Forensics			2					2							3
21CSE537T	Digital Forensics					2		2								3
21CSE538T	Security Scripting and Analysis			2					2							3
21CSE539T	Principles of Secure Coding Principles			2		2										3
21CSE540T	Android Security and Design Internals	2	2		2											3
21CSP302L	Project	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21CSP401L	Major Project	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
21CSP402L	Internship	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
21CSP501L	Specialization Project	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Program Average	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

51. (g) Implementation Plan: Integrated M.Tech. in Computer Science and Engineering with Specialization in Cyber Security & Digital Forensics

Semester – I						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21LEH101T	Communicative English	2	1	0	3	
21MAB101T	Calculus and Linear Algebra	3	1	0	4	
21PYB102J	Semiconductor Physics and Computational Methods	3	1	2	5	
21MES102L ¹	Engineering Graphics and Design	0	0	4	2	
21EES101T	Electrical and Electronics Engineering	3	1	0	4	
21CSS101J	Programming for Problem Solving	3	0	2	4	
21CYM101T ¹	Environmental Science*	1	0	0	0	
21PDM101L ¹	Professional Skills and Practices	0	0	2	0	
21LEM101T ¹	Constitution of India	1	0	0	0	
Total Credits 22						

Semester – II						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21LEH102T	Chinese	2	1	0	3	
21LEH103T	French					
21LEH104T	German					
21LEH105T	Japanese					
21LEH106T	Korean					
21LEH107T	Spanish					
21LEH108T	Russian					
21GNH101J	Philosophy of Engineering	1	0	2	2	
21MAB102T	Advanced Calculus and Complex Analysis	3	1	0	4	
21CYB101J	Chemistry	3	1	2	5	
21BTB102T	Introduction to Computational Biology	2	0	0	2	
21CSC101T	Object Oriented Design and Programming	2	1	0	3	
21MES101L ¹	Basic Civil and Mechanical Workshop	0	0	4	2	
21PDM102L ¹	General Aptitude*	0	0	2	0	
21GNM101L ¹	Physical and Mental Health using Yoga	0	0	2	0	
21GNM102L ¹	National Service Scheme					
21GNM103L ¹	National Cadet Corps					
21GNM104L ¹	National Sports Organization					
Total Credits 21						

Semester – III						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21MAB206T	Numerical Methods and Analysis	3	1	0	4	
21CSC201J	Data Structures and Algorithms	3	0	2	4	
21CSC202J	Operating Systems	3	0	2	4	
21CSC203P ¹	Advanced Programming Practice	3	1	0	4	
21CSS201T	Computer Organization and Architecture	3	1	0	4	
21DCS201P ¹	Design Thinking and Methodology	1	2	0	3	
21LEM201T ¹	Professional Ethics	1	0	0	0	
21PDM201L ¹	Verbal Reasoning	0	0	2	0	
Total Credits 23						

Semester – IV						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21MAB204T	Probability and Queueing Theory	3	1	0	4	
21CSC204J	Design and Analysis of Algorithms	3	0	2	4	
21CSC205P ¹	Database Management Systems	3	1	0	4	
21CSC206T	Artificial Intelligence	2	1	0	3	
E	Professional Elective – I				3	
21PDH209T ¹	Social Engineering	2	0	0	2	
21PDM202L ¹	Critical and Creative Thinking Skills	0	0	2	0	
21LEM202T ¹	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	2	1	0	3	
Total Credits 23						

Semester – V						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21MAB302T	Discrete Mathematics	3	1	0	4	
21CSC301T	Formal Language and Automata	3	0	0	3	
21CSC302J	Computer Networks	3	0	2	4	
21CSC308T	Security Risk Management Principles	3	0	0	3	
E	Professional Elective – II				3	
O	Open Elective – I				3	
21GNP301L ¹	Community Connect	0	0	2	1	
21PDM301L ¹	Analytical and Logical Thinking Skills	0	0	2	0	
21LEM301T ¹	Indian Art Form	1	0	0	0	
Total Credits 21						

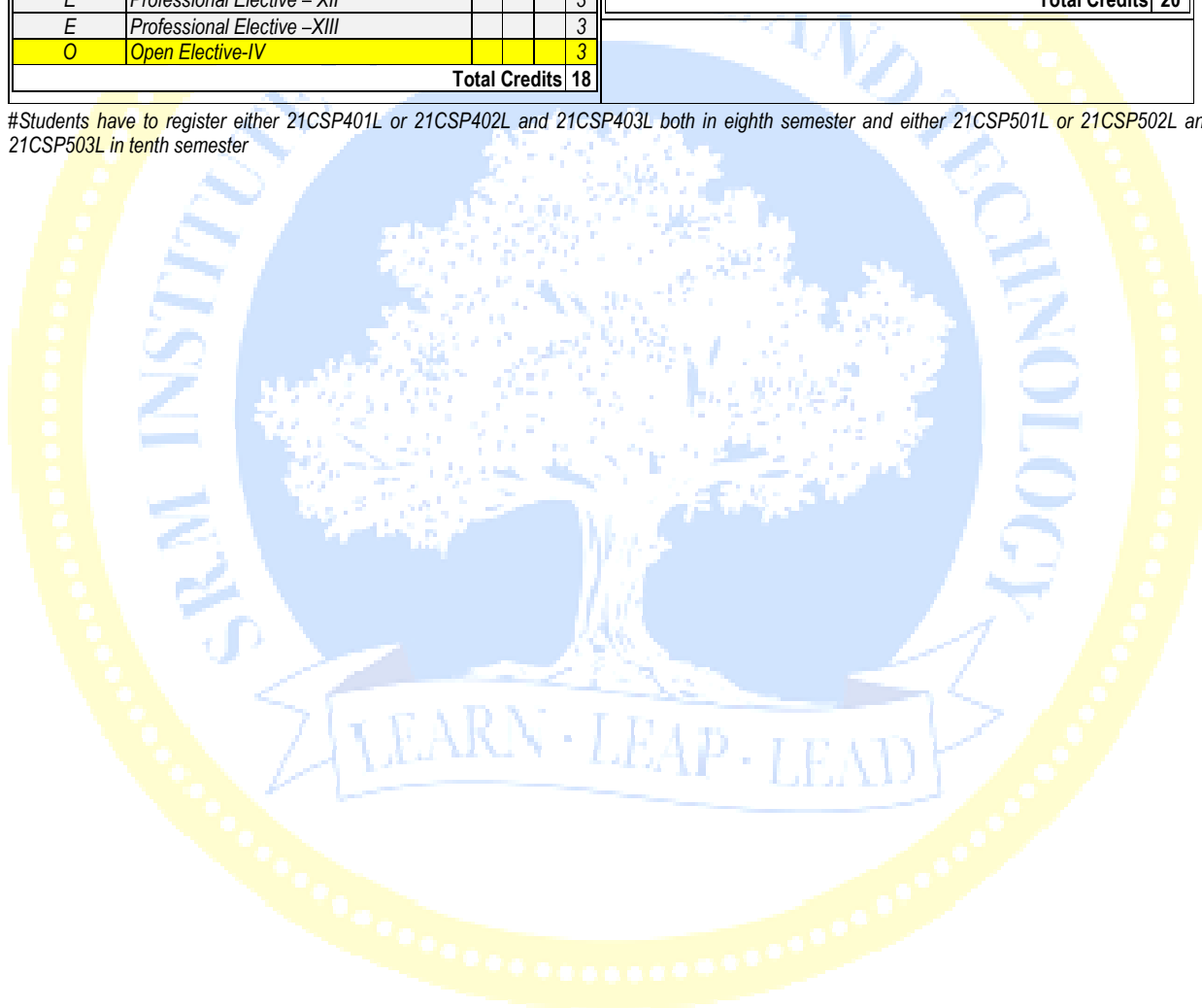
Semester – VI						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21CSS303T	Data Science	2	0	0	2	
21CSC303J	Software Engineering and Project Management	2	0	2	3	
21CSC310J	Malware Analysis	2	0	2	3	
E	Professional Elective – III				3	
E	Professional Elective – IV				3	
O	Open Elective – II				3	
21CSP302L ¹	Project	0	0	6	3	
21CSP303T ¹	MOOC	3	0	0		
21PDM302L ¹	Employability Skills and Practices	0	0	2	0	
21LEM302T ¹	Indian Traditional Knowledge	1	0	0	0	
Total Credits 20						

Semester - VII						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21GNH401T	Behavioral Psychology	2	1	0	3	
E	Professional Elective – V				3	
E	Professional Elective – VI				3	
E	Professional Elective – VII				3	
E	Professional Elective – VIII				3	
O	Open Elective –III				3	
Total Credits 18						

					Semester - VIII					
					Course Code	Course Title	Hours / Week			C
							L	T	P	
					21CSC503T	Security Service Management	3	1	0	4
					21CSC504J	Android Malware Analysis	3	0	2	4
					21IPC501J ²	Research Methodology	2	1	2	4
					21CSP401L	Major Project	0	0	30	15
					21CSP402L	Major Project	0	0	20	10
					21CSP403L	Internship	0	0	10	5
					Total Credits					27

Semester - IX					Semester - X						
Course Code	Course Title	Hours / Week			C	Course Code	Course Title	Hours / Week			C
		L	T	P				L	T	P	
E	Professional Elective –IX				3	21CSP501L	Specialization Project	0	0	40	20
E	Professional Elective – X				3	21CSP502L	Specialization Project	0	0	30	15
E	Professional Elective – XI				3	21CSP503L	Domain Internship	0	0	10	5
E	Professional Elective – XII				3	Total Credits					20
E	Professional Elective –XIII				3						
O	Open Elective-IV				3						
Total Credits					18						

#Students have to register either 21CSP401L or 21CSP402L and 21CSP403L both in eighth semester and either 21CSP501L or 21CSP502L and 21CSP503L in tenth semester





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