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 AND TECHNOLOGY

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

Kattankulathur, Chengalpattu District 603203,

Tamil Nadu, India

27. B.Tech. in Computer Science and Engineering with Specialization in Information Technology/B.Tech. in Information Technology

27. (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 produce successful Computer Science and Engineering graduates with personal and professional responsibilities and commitment to lifelong learning*

27. (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 possess the additional skills in core computer science discipline with knowledge of Hardware, Software, Programming, and Logic & Reasoning.*

27. (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*

27. (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			
	Engineering	Problem Analysis	Design/development of solutions	Conduct investigations of	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
PEO - 1	*3*	-	-	*1*	-	*2*	-	*3*	*2*	*3*	-	-	-	-	-
PEO - 2	-	*2*	*2*	-	*3*	-	*3*	*2*	-	-	-	-	*2*	-	-
PEO - 3	-	*3*	*3*	*2*	-	-	-	-	-	*2*	-	*3*	-	*2*	*2*
PEO - 4	-	*2*	*3*	-	-	*3*	*2*	-	*2*		*2*	*2*	-	*2*	-
PEO - 5	*2*	*3*	-	-	-	*2*	-	*3*	*3*	*3*	-	-	-	-	*2*

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 become socially responsible technocrats by incorporating ethical principles in developing intelligent applications related to algorithms, networking, web design, cloud computing, IoT and data Analytics that are capable to adapt emerging technological changes.*

27. (e) Program Structure: B.Tech. in Computer Science and Engineering with Specialization in Information Technology/B.Tech. in Information Technology

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
21CSS101J	Programming for Problem Solving	3	0	2	4
21MES101L [1]	Basic civil and Mechanical Workshop	0	0	4	2
21MES102L [1]	Engineering Graphics and Design	0	0	4	2
21EES101T	Electrical and Electronics Engineering	3	1	0	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 L	T	P	C
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
21MAB204T	Probability and Queuing Theory	3	1	0	4
21MAB302T	Discrete Mathematics	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 L	T	P	C
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
21CSC317J	Information Retrieval Techniques	2	0	2	3
21CSC314P [1]	Big Data Essentials	2	1	0	3
				Total Credits	42

Open Elective Courses (O)
(Any 3 courses)

Course Code	Course Title	Hours / Week L	T	P	C
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
				Total Credits	09

Project Work, Seminar, Internship in Industry / Higher Technical Institutions (P)

Course Code	Course Title	Hours / Week L	T	P	C
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
				Total Credits	19

Professional Elective Courses (E) *(Any 8 Courses)*					
Course Code	Course Title	Hours / Week			
		L	T	P	C
21CSE251T	*Digital Image Processing*	*3*	*0*	*0*	*3*
21CSE254T	*Bio Inspired Computing*	*2*	*1*	*0*	*3*
21CSE267T	*Statistics for Machine Learning*	*2*	*1*	*0*	*3*
21CSE281T	*Cryptography and Network Security*	*2*	*1*	*0*	*3*
21CSE351T	*Computational Logic*	*2*	*1*	*0*	*3*
21CSE352T	*Neuro Fuzzy and Genetic Programming*	*2*	*1*	*0*	*3*
21CSE355T	*Data Mining and Analytics*	*2*	*1*	*0*	*3*
21CSE356T	*Natural Language Processing*	*2*	*1*	*0*	*3*
21CSE359T	*Information Storage and Management*	*2*	*1*	*0*	*3*
21CSE361T	*Database Security and Privacy*	*2*	*1*	*0*	*3*
21CSE354T	*Full Stack Web Development*	*2*	*1*	*0*	*3*
21CSE362T	*Cloud Computing*	*2*	*1*	*0*	*3*
21CSE310J	*Quantum Computation*	*2*	*0*	*2*	*3*

Professional Elective Courses (E)					
Course Code	Course Title	Hours / Week			
		L	T	P	C
21CSE373T	*Streaming Analytics*	*2*	*1*	*0*	*3*
21CSE451T	*Pattern Recognition Techniques*	*2*	*1*	*0*	*3*
21CSE454T	*Computer Vision*	*2*	*1*	*0*	*3*
21CSE456T	*Software Defined Networks*	*2*	*1*	*0*	*3*
21CSE457T	*Service Oriented Architecture*	*2*	*1*	*0*	*3*
21CSE460T	*Network Protocols and Algorithms*	*2*	*1*	*0*	*3*
21CSE475T	*Applied Graph Theory*	*2*	*1*	*0*	*3*
21CSE476T	*Logical Deduction and Non-verbal Reasoning*	*2*	*1*	*0*	*3*
21CSE477T	*Cloud Native Architecture for Modern Platforms*	*2*	*1*	*0*	*3*
21CSE479T	*Fault Tolerant Systems*	*2*	*1*	*0*	*3*
21CSE480T	*Image and Video Processing*	*2*	*1*	*0*	*3*
				Total Credits	**24**

27. (f) Programme Articulation: B.Tech. in Computer Science and Engineering with Specialization in Information Technology/B.Tech. in Information Technology

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
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	-
21CSC317J	Information Retrieval Techniques	3	2	3	3	-	-	-	-	-	-	-	-	2	2	3
21CSE267T	Statistics for Machine Learning	3	3		2	-	-	-	-	-	-	-	-	3	2	3
21CSE251T	Digital Image Processing	3	2	2	3	-	-	-	-	-	-	-	-	2	3	-
21CSE254T	Bio Inspired Computing	2	2	2	2	-	-	-	-	-	-	-	-	-	3	2
21CSE351T	Computational Logic	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
21CSE352T	Neuro Fuzzy and Genetic Programming	2	3	-	-	3	-	-	-	-	-	-	-	-	2	-
21CSE354T	Full Stack Web Development	3	2	2	-	-	-	-	-	-	-	-	-	2	-	-
21CSE358T	Network Security and Cryptography	2	3	2	-	2	-	-	-	-	-	-	-	2	-	-
21CSE359T	Information Storage and Management	-	3	3	-	1	-	-	-	-	-	-	-	1	2	-
21CSE361T	Database Security and Privacy	3	2	2	2	1	-	-	-	-	-	-	2	1	-	-
21CSE362T	Cloud Computing	2	1	1	1	2	-	-	-	-	-	-	-	2	-	-
21CSE373T	Streaming Analytics	2	2	-	2	2	-	-	-	-	-	-	-	2	3	3
21CSE451T	Pattern Recognition Techniques	3	2	2	-	2	-	-	-	-	-	-	-	1	2	2
21CSE454T	Computer Vision	2	2	1	1	1	-	-	-	-	-	-	-	3	-	2
21CSE456T	Software Defined Networks	1	1	1	3	1	2	-	-	-	-	-	-	2	-	-
21CSE457T	Service Oriented Architecture	2	1	2	-	-	-	-	-	-	-	-	-	2	-	-
21CSE460T	Network Protocols and Algorithms	1	2	1	-	-	-	-	-	-	-	-	-	1	-	-
21CSE475T	Applied Graph Theory	2	3	3	3	-	-	-	-	-	-	-	-	2	3	
21CSE476T	Logical Deduction and Non-Verbal Reasoning	3	2	-	3	-	-	-	-	-	-	-	2	-	2	-
21CSE477T	Cloud Native Architecture for Modern Platforms	2	3	3	3	2	-	-	-	-	-	-	-	-	2	3
21CSE479T	Fault tolerant Systems	2	3		3	-	-	-	-	-	-	-	-	3	-	3
21CSE480T	Image and Video Processing	3	2	2	3	-	-	-	-	-	-	-	-	3	3	3
21CSP302L	Project	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21CSP303T	MOOC	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	Major Project	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
21CSP403L	Internship	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

27. (g) Implementation Plan: B.Tech. in Computer Science and Engineering with Specialization in Information Technology/B.Tech. in Information Technology

Semester – I

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
21MAB101T	Calculus and Linear Algebra	3	1	0	4
21CYB101J	Chemistry	3	1	2	5
21BTB102T	Introduction to Computational Biology	2	0	0	2
21CSS101J	Programming for Problem Solving	3	0	2	4
21MES101L [1]	Basic Civil and Mechanical Workshop	0	0	4	2
21PDM101L [1]	Professional Skills and Practices	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	22

Semester – II

Course Code	Course Title	Hours / Week L	T	P	C
21LEH101T	Communicative English	2	1	0	3
21MAB102T	Advanced Calculus and Complex Analysis	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
21CSC101T	Object Oriented Design and Programming	2	1	0	3
21CYM101T [1]	Environmental Science*	1	0	0	0
21PDM102L [1]	General Aptitude*	0	0	2	0
21LEM101T [1]	Constitution of India	1	0	0	0
				Total Credits	21

Semester – III

Course Code	Course Title	Hours / Week L	T	P	C
21MAB206T	Numerical Methods and Analysis	3	1	0	4
21DCS201P [1]	Design Thinking and Methodology	1	2	0	3
21CSS201T	Computer Organization and Architecture	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
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
21CSC314P [1]	Big Data Essentials	2	1	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
21CSC317J	Information Retrieval Techniques	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

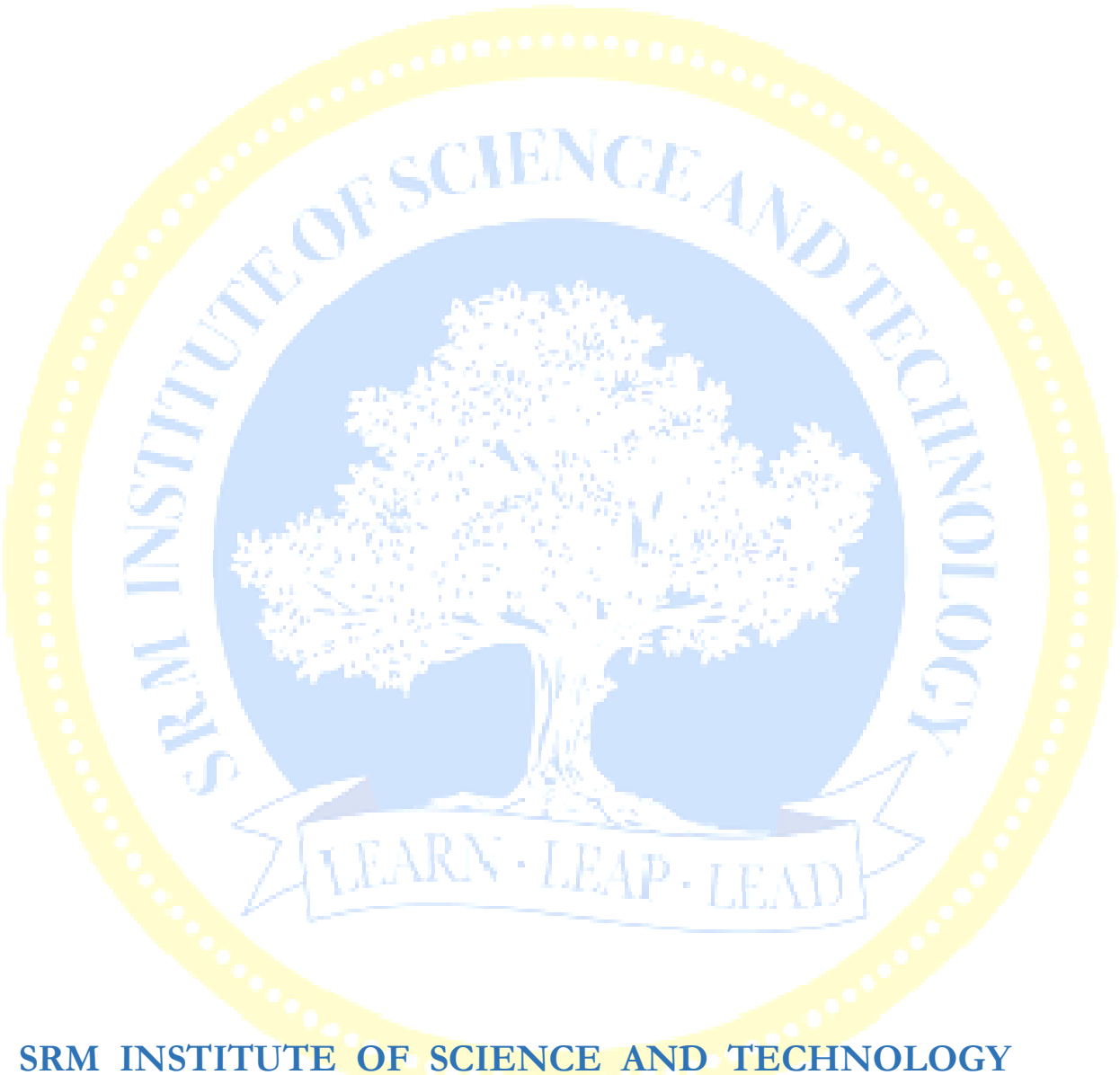
Semester – VII

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 L	T	P	C
21CSP401L	Major Project	0	0	30	15
21CSP402L	Major Project	0	0	20	10
21CSP403L	Internship#	0	0	10	5
				Total Credits	15

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



SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

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

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