

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 2023)



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

2. B.Tech. in Artificial Intelligence

2. (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 Artificial Intelligence graduates with the ability to develop, test, iterate and demonstrate how Artificial Intelligence can be used to tackle the problems in divergent domains with commitment to lifelong learning

2. (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 analyze the problems by applying the principles of computer science, mathematics, and scientific investigation and to design and implement industry accepted solutions using latest AI technologies to meet ever changing developments in computer science

2. (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	-	-	-	2
PEO - 2	-	-	2	-	-
PEO - 3	-	3	3	-	-
PEO - 4	-	-	-	2	3
PEO - 5	2	-	-	-	3

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

2. (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	3	3	-	2	-	-	-	-	-	-	-	3	3	3
PEO - 2	3	3	3	3	-	3	-	2	-	-	-	-	3	3	3
PEO - 3	-	3	3	3	2	-	-	1	-	3	3	-	-	3	3
PEO - 4	-	-	2	2	-	3	3	3	3	-	3	2	1	2	3
PEO - 5	2	-	-	2	3	3	2	-	3	2	-	3	2	3	3

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

PSO – Program Specific Outcomes (PSO)

PSO - 1	To apply technology and algorithms that allows Computers and Machines to work Intelligently.
PSO - 2	To Understand, analyze and develop the Artificial Intelligence based Systems.
PSO - 3	Ability to apply the Artificial Intelligence Technology and to adapt to the Technological revolutions in building the Artificial Intelligence based systems for solving the real-world problems.

2. (e) Program Structure: B.Tech. in Artificial Intelligence

Humanities & Social Sciences including Management Courses (H)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21LEH101T	Communicative English	2	1	0	3	
21LEH102T	Chinese	2	1	0	3	
21LEH103T	French					
21LEH104T	German					
21LEH105T	Japanese					
21LEH106T	Korean					
21LEH107T	Spanish					
21GNH101J	Philosophy of Engineering	1	0	2	2	
21PDH201T	Social Engineering	2	0	0	2	
21GNH401T	Behavioral Psychology	2	1	0	3	
Total Credits					13	

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	
21MAB201T	Transforms and Boundary Value Problems	3	1	0		
21MAB304T	Probability and Applied Statistics	3	1	0	4	
21MAB302T	Discrete Mathematics	3	1	0	4	
21BTB102T	Introduction to Computational Biology	2	0	0	2	
Total Credits					32	

Engineering Science Courses (S)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21EES101T	Electrical and Electronics Engineering	3	1	0	4	
21MES101L	Basic Civil and Mechanical Workshop	0	0	4	2	
21MES102L	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	Design Thinking and Methodology	1	2	0	3	
21AIS101J	Foundation of Data Analysis	2	0	2	3	
21AIS201J	Foundation of Artificial Intelligence	2	0	2	3	
Total Credits					25	

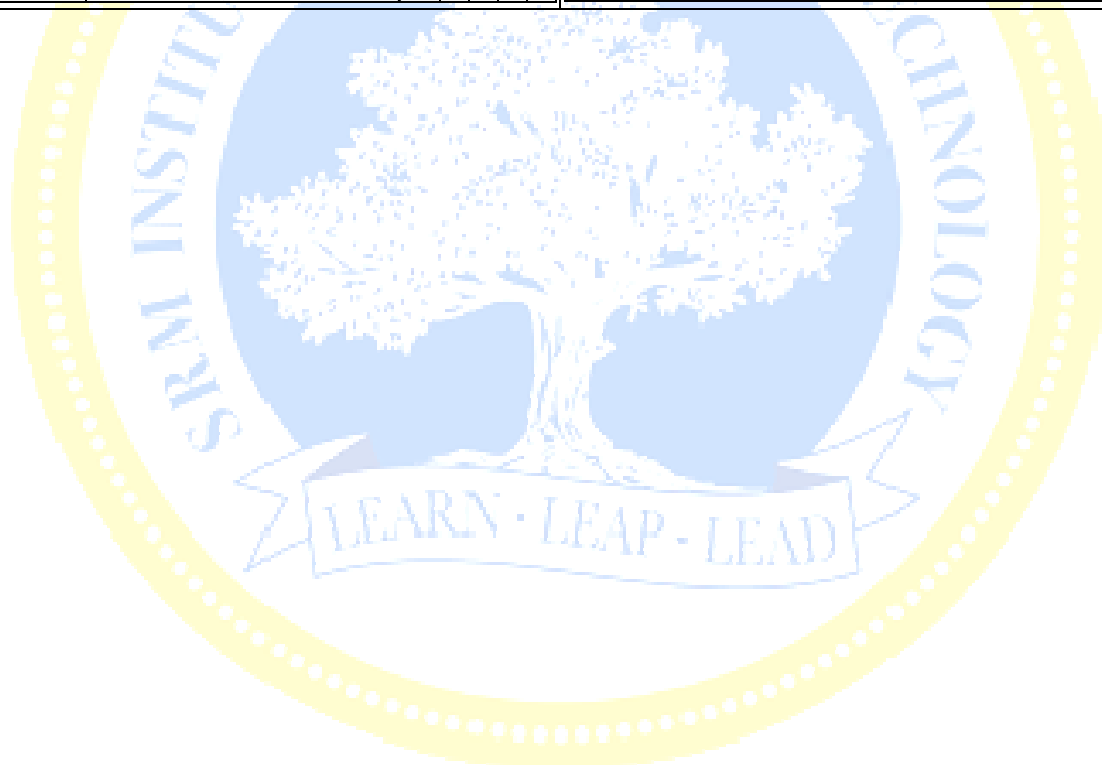
Professional Core Courses (C)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21CSC101T	Object Oriented Design and Programming	2	1	0	3	
21CSC201J	Data Structures and Algorithms	3	0	2	4	
21CSC203P	Advanced Programming Practice	3	1	0	4	
21CSC204J	Design and Analysis of Algorithms	3	0	2	4	
21AIC202J	Neural Networks and Machine Learning	2	0	2	3	
21CSC202J	Operating Systems	3	0	2	4	
21CSC301T	Formal Language and Automata	3	0	0	3	
21CSC205P	Database Management Systems	3	1	0	4	
21AIC301J	Deep Learning Techniques	3	0	2	4	
21AIC302J	Reinforcement Learning Techniques	2	0	2	3	
21AIC303T	Computer Networks and Communications	2	0	0	2	
21CSC303J	Software Engineering and Project Management	2	0	2	3	
21AIC401T	Inferential Statistics and Predictive Analytics	3	0	0	3	
21AIC402T	Design of Artificial Intelligence Products	3	0	0	3	
Total Credits					47	

Project Work, Seminar, Internship in Industry / Higher Technical Institutions (P)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21GNP301L	Community Connect	0	0	2	1	3
21AIP302L	Project	0	0	6		
21AIP303T	MOOC	3	0	0		
21AIP401L	Major Project	0	0	30	15	10
21AIP402L	Major Project	0	0	20		
21AIP403L	Internship#	0	0	10	5	
Total Credits					19	

Open Elective Courses (O) (Any 3 Courses)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21AIO351T	Introduction to Artificial Intelligence	2	1	0	3	09
21AIO352T	Machine Learning	2	1	0	3	
21AIO353T	Python for Data Analytics	2	1	0	3	
21AIO354T	Soft Computing	2	1	0	3	
Total Credits					09	

Non Credit Courses (M)						
Course Code	Course Title	Hours / Week			C	
		L	T	P		
21PDM101L	Professional Skills and Practices	0	0	2	0	03
21PDM102L	General Aptitude	0	0	2	0	
21PDM201L	Verbal Reasoning	0	0	2	0	
21PDM202L	Critical and Creative Thinking Skills	0	0	2	0	
21PDM301L	Analytical and Logical Thinking Skills	0	0	2	0	
21PDM302L	Employability Skills and Practices	0	0	2	0	
21CYM101T	Environmental Science	1	0	0	0	
21LEM101T	Constitution of India	1	0	0	0	
21LEM102T	Universal Human Values – Introduction	1	0	0	0	
21LEM201T	Professional Ethics	1	0	0	0	
21LEM202T	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	2	1	0	3	
21LEM301T	Indian Art Form	1	0	0	0	
21LEM302T	Indian Traditional Knowledge	1	0	0	0	
21GNM101L	Physical and Mental Health using Yoga	0	0	2	0	
21GNM102L	National Service Scheme					
21GNM103L	National Cadet Corps					
21GNM104L	National Sports Organization					
Total Credits					03	

Professional Elective Courses (E) (Any 5 Elective Courses)						Professional Elective Courses (E)					
Course Code	Course Title	Hours / Week				Course Code	Course Title	Hours / Week			
		L	T	P	C			L	T	P	C
21AIE321T	Stochastic Decision Making	3	0	0	3	21AIE332T	Image and Video processing	3	0	0	3
21AIE322T	Cognitive Science and Analytics	3	0	0	3	21CSE252T	Biometrics	2	1	0	3
21AIE323T	Internet of Things Architecture and Protocols	3	0	0	3	21AIE335T	Surveillance Video Analytics	3	0	0	3
21AIE324T	Intelligent Autonomous Systems	3	0	0	3	21CSE411T	Artificial Intelligence in Genomics and Disease Prediction	3	0	0	3
21AIE325T	Intelligence of Biological Systems	3	0	0	3	21CSE412T	Machine Learning in Drug Discovery	3	0	0	3
21CSE398T	Logic and Knowledge Representation	3	0	0	3	21CSE418T	Cyber Physical Systems	3	0	0	3
21CSE320T	Evolutionary Computing	3	0	0	3	21CSE421T	Business Intelligence and Analytics	2	1	0	3
21AIE338P	High Performance Computing System	2	1	0	3	21AIE337T	Speech Recognition and Understanding	3	0	0	3
21CSE439T	Virtual Reality and Augmented Reality	2	1	0	3	21AIE428T	Time Series Analysis	3	0	0	3
21AIE422T	Autonomous Navigation and Vehicles	3	0	0	3	21CSE362T	Cloud Computing	2	1	0	3
21AIE423T	Mobile Game Development	3	0	0	3	21AIE430T	Distributed Systems	3	0	0	3
21CSE311P	Robot Programming	2	1	0	3	21AIE431T	Big Data Analytics: Hadoop, Spark, and NoSQL	3	0	0	3
21CSE312P	Software Engineering in Artificial Intelligence	2	1	0	3	21CSE376T	Nature Inspired Computing Techniques	3	0	0	3
21CSE313P	Accelerated Data Science	2	1	0	3	21AIE434T	Bioinformatics	3	0	0	3
21CSE323T	Marketing Analytics	2	1	0	3	21AIE435T	Theoretical and Computational Neuroscience	3	0	0	3
21AIE330T	Text Processing	3	0	0	3	Total Credits					15
21AIE331T	Advanced Social, Text and Media Analytics	3	0	0	3						



2. (f) Programme Articulation: B.Tech. in Artificial Intelligence

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	-
21CSS201T	Computer Organization and Architecture	3	2	-	-	-	-	-	-	-	-	-	-	1	2	1
21AIS101J	Foundation of Data Analysis		2			2							2	3		
21AIS201J	Foundation of Artificial Intelligence		2					2			2		2	3	2	
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	-
21AIC202J	Neural Networks and Machine Learning		3			3						3		2	3	
21AIM201T	Professional Ethics for Artificial Intelligence							3	3	3			1			3
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	-
21AIC303T	Computer Networks and Communications	2		3		3										
21CSC205P	Database Management Systems	3	2	2	-	-	-	-	-	-	-	-	-	2	1	-
21AIC301J	Deep Learning Techniques		3			3						3		2	3	3
21AIC302J	Reinforcement Learning Techniques		3			3						3		2	3	3
21AIC401T	Inferential Statistics and Predictive Analytics		3		3								2	1	2	3
21AIC402T	Design of Artificial Intelligence Products			3		3							1	3	3	3
21AIE321T	Stochastic Decision Making		2			2								1	2	3
21AIE322T	Cognitive Science and Analytics	1	2			2								3	3	2
21AIE323T	Internet of Things Architecture and Protocols					2		2						1		3
21AIE324T	Intelligent Autonomous Systems			2				2						2	2	3
21AIE325T	Intelligence of Biological Systems			2		2								2	3	
21CSE398T	Logic and Knowledge Representation		2		3									2		3
21CSE320T	Evolutionary Computing	3	1	2	2									2	3	
21CSE439T	Virtual Reality and Augmented Reality	3	3	2	2	3								2		2
21AIE422T	Autonomous Navigation and Vehicles				2	2		2							2	3
21AIE423T	Mobile Game Development			3		3							3		3	
21CSE311P	Robot Programming	2	2		3		2							2		3
21CSE312P	Software Engineering in Artificial Intelligence			3	3	3								2	2	3
21CSE313P	Accelerated Data Science	1	2		3									1		2
21CSE323T	Marketing Analytics							3			3			2	2	1
21AIE330T	Text Processing		3			3						3			3	2
21AIE331T	Advanced Social, Text and Media Analytics		3			3						3			3	
21AIE332T	Image and Video processing			3		3		2							3	3
21CSE252T	Biometrics	3		1	2					2					2	
21AIE335T	Surveillance Video Analytics			3		3		2							2	3
21CSE411T	Artificial Intelligence in Genomics and Disease Prediction	3	3	2												3
21CSE412T	Machine Learning in Drug Discovery	3	2	3												3
21AIE337T	Speech Recognition and Understanding		2			2		2			2			2	3	
21AIE428T	Time Series Analysis				3			2							2	3
21CSE362T	Cloud Computing	2	3	2	1	2										3
21AIE430T	Distributed Systems	2		3		3										3
21AIE431T	Big Data Analytics: Hadoop, Spark, and NoSQL		3			3							2		2	3
21CSE376T	Nature Inspired Computing Techniques	3	2													3
21AIE434T	Bioinformatics			3					3				2	2	2	
21AIE435T	Theoretical and Computational Neuroscience		3	3			2							3		
Program Average																

2. (g) Implementation Plan: B.Tech. in Artificial Intelligence

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	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	Environmental Science*	1	0	0	0	
21PDM101L	Professional Skills and Practices	0	0	2	0	
21LEM101T	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					
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	2	2	
21AIS101J	Foundation of Data Analysis	2	0	2	3	
21MES101L	Basic Civil and Mechanical Workshop	0	0	4	2	
21PDM102L	General Aptitude*	0	0	2	0	
21GNM101L	Physical and Mental Health using Yoga	0	0	2	0	
21GNM102L	National Service Scheme					
21GNM103L	National Cadet Corps					
21GNM104L	National Sports Organization					
Total Credits 21						

Semester - III						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21MAB201T	Transforms and Boundary Value Problems	3	1	0	4	
21DCS201P	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	
21CSC101T	Object Oriented Design and Programming	2	1	0	3	
21CSC203P	Advanced Programming Practice	3	1	0	4	
21LEM201T	Professional Ethics	1	0	0	0	
21PDM201L	Verbal Reasoning	0	0	2	0	
Total Credits 22						

Semester - IV						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21MAB304T	Probability and Applied Statistics	3	1	0	4	
21CSC204J	Design and Analysis of Algorithms	3	0	2	4	
21AIS201J	Foundation of Artificial Intelligence	2	0	2	3	
21AIC202J	Neural Networks and Machine Learning	2	0	2	3	
21CSC202J	Operating Systems	3	0	2	4	
21PDH201T	Social Engineering	2	0	0	2	
21PDM202L	Critical and Creative Thinking Skills	0	0	2	0	
21LEM202T	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	
21CSC205P	Database Management Systems	3	1	0	4	
21AIC301J	Deep Learning Techniques	3	0	2	4	
E	Professional Elective – I				3	
O	Open Elective – I				3	
21GNP301L	Community Connect	0	0	2	1	
21PDM301L	Analytical and Logical Thinking Skills	0	0	2	0	
21LEM301T	Indian Art Form	1	0	0	0	
Total Credits 22						

Semester - VI						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21AIC303T	Computer Networks and Communications	2	0	0	2	
21CSC303J	Software Engineering and Project Management	2	0	2	3	
21AIC302J	Reinforcement Learning Techniques	2	0	2	3	
E	Professional Elective – II				3	
E	Professional Elective – III				3	
O	Open Elective – II				3	
21AIP302L	Project	0	0	6	3	
21AIP303T	MOOC	3	0	0		
21PDM302L	Employability Skills and Practices	0	0	2	0	
21LEM302T	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	
21AIC401T	Inferential Statistics and Predictive Analytics	3	0	0	3	
21AIC402T	Design of Artificial Intelligence Products	3	0	0	3	
E	Professional Elective – IV				3	
E	Professional Elective – V				3	
O	Open Elective –III				3	
Total Credits 18						

Semester - VIII						
Course Code	Course Title	Hours / Week				
		L	T	P	C	
21AIP401L	Major Project	0	0	30	15	
21AIP402L	Major Project	0	0	20	10	
21AIP403L	Internship#	0	0	10	5	
Total Credits 15						

#Students have to register either 21AIP401L or 21AIP402L and 21AIP403L both in eighth semester



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