

Department of Computer Science Engineering

M.Tech. Integrated Computer Science and Engineering Curriculum

(Applicable to the students admitted from AY 2024-25 onwards)



**School of Engineering and Sciences
SRM University-AP, Andhra Pradesh**

ABBREVIATIONS

AEC	Ability Enhancement Courses
VAC	Value Added Courses
SEC	Skill Enhancement Courses
FIC	Foundation & Interdisciplinary Courses
OE	Open Elective
RDIP	Research / Design / Industrial Practice / Project / Thesis / Internship
CE	Core Elective
CC	Core Course
SE	Stream Elective
TE	Technical Elective

Semester - I							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	AEC	U AEC	Art of Listening, Speaking and Reading Skills	1	0	1	2
2	VAC	U VAC	Environmental Science	2	0	0	2
3	SEC	S SEC	Analytical Reasoning and Aptitude Skills-1	1	1	1	3
4	FIC	S FIC	Emerging Technologies	2	0	0	2
5	FIC	S FIC	Engineering Physics	2	0	1	3
6	FIC	S FIC	Calculus For Engineers	3	0	0	3
7	Core	CC	Fundamentals of Computing and Programming in C	3	0	1	4
Semester Total				14	1	4	19

Semester - II							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	AEC	U AEC	Effective Writing and Presentation Skills	1	0	1	2
2	VAC	UVAC	Universal Human Values and Ethics	2	0	0	2
3	SEC	S SEC	Entrepreneurial Mindset	2	0	0	2
4	FIC	S FIC	Principles of Economics and Management	2	0	1	3
5	FIC	S FIC	Linear Algebra and Differential Equations	3	0	0	3
6	FIC	S FIC	Foundations of Electrical and Electronics Engineering	2	0	1	3
7	Core	CC	Data Structures	3	0	1	4
Semester Total				15	0	4	19

SEMESTER - III							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	AEC	S AEC	Problem Solving Skills	1	0	1	2
2	VAC	U VAC	Co-Curricular Activities	0	0	2	2*
3	VAC	U VAC	Community Service and Social Responsibility	0	0	2	2*
4	SEC	D SEC	Coding Skills - I	0	0	2	2
5	Core	CC	OOPS with C++	3	0	1	4
6	Core	CC	Discrete Mathematics	3	0	0	3
7	Core	CC	Design and Analysis of Algorithms	3	0	1	4
8	Core	CC	Digital Electronics	3	0	1	4
9	OE	OE	Open Elective/Minor	3	0	0	3
Semester Total				16	0	10	22

SEMESTER - IV							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	AEC	S AEC	Industry Standard Employability skills 1	1	0	1	2
2	VAC	U VAC	Co-Curricular Activities	0	0	2	2*
3	VAC	U VAC	Community Service and Social Responsibility	0	0	2	2*
4	SEC	D SEC	Coding Skills - II	0	0	2	2
5	Core	CC	Hands on with Python	0	0	2	2
6	Core	CC	Probability and Statistics	3	0	0	3
7	Core	CC	Database Management Systems	3	0	1	4
8	Core	CC	Full Stack Development	2	0	2	4
9	OE	OE	Open Elective/Minor	3	0	0	3
Semester Total				12	0	12	20

SEMESTER V							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	VAC	U VAC	Co-Curricular Activities	0	0	2	2*
2	VAC	U VAC	Community Service and Social Responsibility	0	0	2	2*
3	SEC		Career Skills-1	1	0	1	2
4	Core	CC	Operating Systems	3	0	1	4
5	Core	CC	Machine Learning	3	0	1	4
6	Core	CC	Advanced Java Programming	3	0	1	4
7	Core	CC	Computer Organization and Architecture	3	0	1	4
8	RDIP	RDIP	Summer Internship/ Mini Project/ Research Project	0	0	4	4
9	OE	OE	Open Elective/Minor	3	0	0	3
Semester Total				16	0	13	25

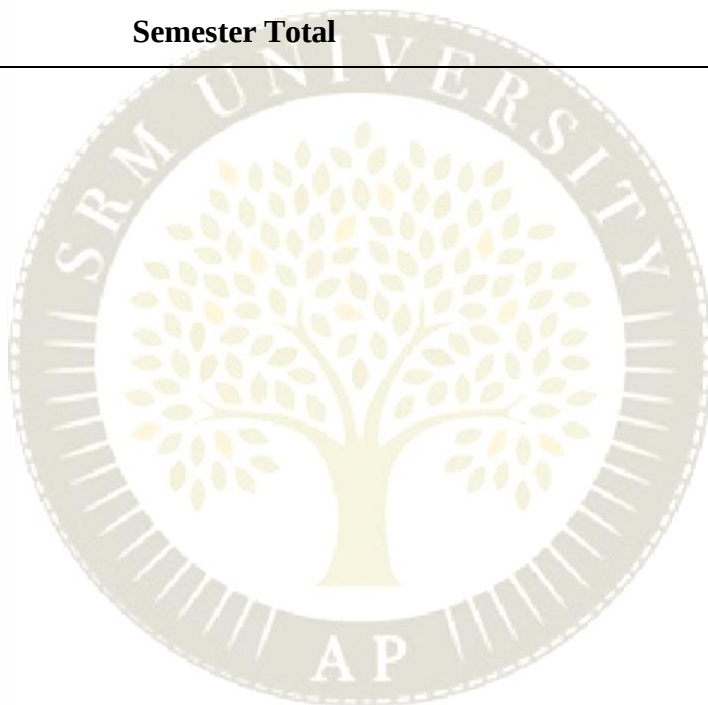
SEMESTER VI							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	VAC	U VAC	Co-Curricular Activities	0	0	2	2
2	VAC	U VAC	Community Service and Social Responsibility	0	0	2	2
3	SEC	E SEC	Career Skills-II	1	0	1	2
4	SEC	E SEC	Industry Standard Employability Soft skills	1	0	1	2
5	Core	CC	Computer Networks	3	0	1	4
6	Core	CC	Software Engineering and Project Management	3	0	1	4
7	Elective	CE	Core Elective - I	3	0	0	3
8	Elective	CE/SE	Stream Elective - I	3	0	1	4
9	Elective	CE/SE	Stream Elective – II	3	0	1	4
Semester Total				17	0	10	27

SEMESTER VII							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	VAC	S VAC	Research Seminar	0	0	1	1
2	SEC	S SEC	Design Thinking	1	0	1	2
4	Core	CC	Automata and Compilers Design	3	0	0	3
5	FIC	D FIC	Advanced Probability, Linear Algebra and Optimization Techniques	0	2	1	3
6	Core	CC	Advanced Algorithms and Analysis	3	0	1	4
7	Core	CC	Advanced Python Programming Lab	0	0	2	2
8	Elective	CE	Core Elective - II	3	0	0	3
9	Elective	CC	Artificial Intelligence and Knowledge Representation	3	0	0	3
10	Elective	CC	Principles of soft computing.	3	0	0	3
Semester Total				16	2	6	24

SEMESTER VIII							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	VAC	U VAC	Community Engagement and Social Responsibility	0	0	1	1
2	VAC	S VAC	Research Seminar	0	0	1	1
3	Core	CC	Deep Learning: Methodologies and Techniques	3	0	1	4
4	Core	CC	Natural Language Computing	3	0	1	4
5	Core	CC	Data Warehousing and Pattern Mining	3	0	1	4
6	Elective	CE/SE	Stream Elective V	3	0	1	4
7	Elective	CE/SE	Stream Elective VI	3	0	1	4
8	Elective	CE/SE	Project (UROP/IDP)	0	2	1	3
9	RDIP	RDIP	Project Management	0	2	1	3
Semester Total				15	4	9	28

SEMESTER IX							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	RDIP	RDIP	Thesis I	0	0	15	15
2	RDIP	RDIP	Industrial Practice	0	0	3	3
Semester Total				0	0	18	18

SEMESTER X							
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	RDIP	RDIP	Thesis II	0	0	16	16
Semester Total				0	0	16	16



These Electives are for First Three Years of The Course

Specialization: Artificial Intelligence and Machine Learning								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Artificial Intelligence	3	0	1	4	120
2	Elective	SE	Digital Image Processing	3	0	1	4	120
3	Elective	SE	Deep Learning	3	0	1	4	120
4	Elective	SE	Principles of Soft Computing	3	0	1	4	120

Specialization: Cyber Security								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Cryptography and Network Security	3	0	1	4	120
2	Elective	SE	Web Application Penetration Testing	3	0	1	4	120
3	Elective	SE	Vulnerability Analysis and Cyber Forensics	3	0	1	4	120
4	Elective	SE	Blockchain Technology	3	0	1	4	120

Specialization: Big Data Analytics								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Data Warehousing and Mining	3	0	1	4	120
2	Elective	SE	Applied Data Science	3	0	1	4	120
3	Elective	SE	Principles of Big Data Management	3	0	1	4	120
4	Elective	SE	Information Retrieval	3	0	1	4	120

Specialization: Distributed and Cloud Computing								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Parallel and Distributed Computing	3	0	1	4	120
2	Elective	SE	Cloud Computing	3	0	1	4	120
3	Elective	SE	Edge Computing	3	0	1	4	120
4	Elective	SE	Service Oriented Computing	3	0	1	4	120

Specialization: Internet of Things								
S.No	Category	Sub-Category	Course Title	L	T/	P/	C	LH
1	Elective	SE	Embedded Systems	3	0	1	4	120
2	Elective	SE	IoT System Design and Implementation	3	0	1	4	120
3	Elective	SE	IoT Data Analytics	3	0	1	4	120
4	Elective	SE	IoT Security and Blockchain	3	0	1	4	120



Specialization: Artificial Intelligence and Machine Learning								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Artificial Intelligence	3	0	1	4	120
2	Elective	SE	Digital Image Processing	3	0	1	4	120
3	Elective	SE	Deep Learning	3	0	1	4	120
4	Elective	SE	Principles of Soft Computing	3	0	1	4	120

Specialization: Cyber Security								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Cryptography and Network Security	3	0	1	4	120
2	Elective	SE	Web Application Penetration Testing	3	0	1	4	120
3	Elective	SE	Vulnerability Analysis and Cyber Forensics	3	0	1	4	120
4	Elective	SE	Blockchain Technology	3	0	1	4	120

Specialization: Big Data Analytics								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Data Warehousing and Mining	3	0	1	4	120
2	Elective	SE	Applied Data Science	3	0	1	4	120
3	Elective	SE	Principles of Big Data Management	3	0	1	4	120
4	Elective	SE	Information Retrieval	3	0	1	4	120

Specialization: Distributed and Cloud Computing								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Parallel and Distributed Computing	3	0	1	4	120
2	Elective	SE	Cloud Computing	3	0	1	4	120
3	Elective	SE	Edge Computing	3	0	1	4	120
4	Elective	SE	Service Oriented Computing	3	0	1	4	120

Specialization: Internet of Things								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	SE	Embedded Systems	3	0	1	4	120
2	Elective	SE	IoT System Design and Implementation	3	0	1	4	120
3	Elective	SE	IoT Data Analytics	3	0	1	4	120
4	Elective	SE	IoT Security and Blockchain	3	0	1	4	120

Technical Electives

S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	TE	Human Computer Interaction	3	0	0	3	90
2	Elective	TE	Advanced Computer Architecture	3	0	0	3	90
3	Elective	TE	Natural Language Processing	3	0	0	3	90
4	Elective	TE	Computer Graphics	3	0	0	3	90
5	Elective	TE	Advanced Data Structures and Algorithms	3	0	0	3	90
6	Elective	TE	Distributed Operating Systems	3	0	0	3	90
7	Elective	TE	Data and Web Mining	3	0	0	3	90
8	Elective	TE	Complexity Theory	3	0	0	3	90
9	Elective	TE	Software Project Management	3	0	0	3	90
10	Elective	TE	Multimedia	3	0	0	3	90
11	Elective	TE	Deep Learning	3	0	0	3	90
12	Elective	TE	Advanced Database Management Systems	3	0	0	3	90
13	Elective	TE	Fog Computing	3	0	0	3	90
14	Elective	TE	Parallel Algorithms	3	0	0	3	90
15	Elective	TE	Web Services	3	0	0	3	90
16	Elective	TE	Advances in Data Mining	3	0	0	3	90
17	Elective	TE	Social Network Analysis	3	0	0	3	90
18	Elective	TE	Recommender Systems	3	0	0	3	90
19	Elective	TE	Computational and Complexity Theory	3	0	0	3	90
20	Elective	TE	Cryptography and Network Security	3	0	0	3	90
21	Elective	TE	Artificial Intelligence	3	0	0	3	90
22	Elective	TE	Machine Learning on Edge Computing	3	0	0	3	90
23	Elective	TE	Mobile and wireless security	3	0	0	3	90
24	Elective	TE	Internet protocols and networking	3	0	0	3	90
25	Elective	TE	Mobile application security testing	3	0	0	3	90
26	Elective	TE	IoT security	3	0	0	3	90
27	Elective	TE	Biometric Security	3	0	0	3	90
28	Elective	TE	Cyber Law	3	0	0	3	90
29	Elective	TE	Ethical Hacking	3	0	0	3	90
30	Elective	TE	Security audit and Risk Assessment	3	0	0	3	90
31	Elective	TE	Digital Forensics and Incident Response	3	0	0	3	90
32	Elective	TE	Security Analytics	3	0	0	3	90
33	Elective	TE	Multiview Geometry	3	0	0	3	90
34	Elective	TE	Quantum Computation	3	0	0	3	90

These Electives are For Final Year of The Course

List of Core Electives								
S.No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C	LH
1	Elective	CE	Modelling and Simulation of Digital Systems	3	0	0	3	90
2	Elective	CE	Knowledge Engineering and Expert Systems	3	0	0	3	90
3	Elective	CE	Information Retrieval	3	0	0	3	90
4	Elective	CE	Pattern Recognition	3	0	0	3	90
5	Elective	CE	Problem Solving Methods in Artificial Intelligence	3	0	0	3	90
6	Elective	CE	Cognitive Systems	3	0	0	3	90
7	Elective	CE	Introduction to High Performance Computing	3	0	0	3	90
8	Elective	CE	Computer Vision	3	0	0	3	90
9	Elective	CE	Number theory and Cryptography	3	0	0	3	90
10	Elective	CE	Agent Systems	3	0	0	3	90
11	Elective	CE	Artificial Intelligence and Neural Networks	3	0	0	3	90
12	Elective	CE	Statistical Modelling for Computer Sciences	3	0	0	3	90
13	Elective	CE	Fuzzy Logic and its Applications	3	0	0	3	90
14	Elective	CE	Electronic Design Automation	3	0	0	3	90
15	Elective	CE	Multiagent Systems	3	0	0	3	90
16	Elective	CE	Optimization Paradigms: Exploring Methods and Strategic Frameworks	3	0	0	3	90
17	Elective	CE	Soft Computing	3	0	0	3	90