

Department of Computer Science Engineering

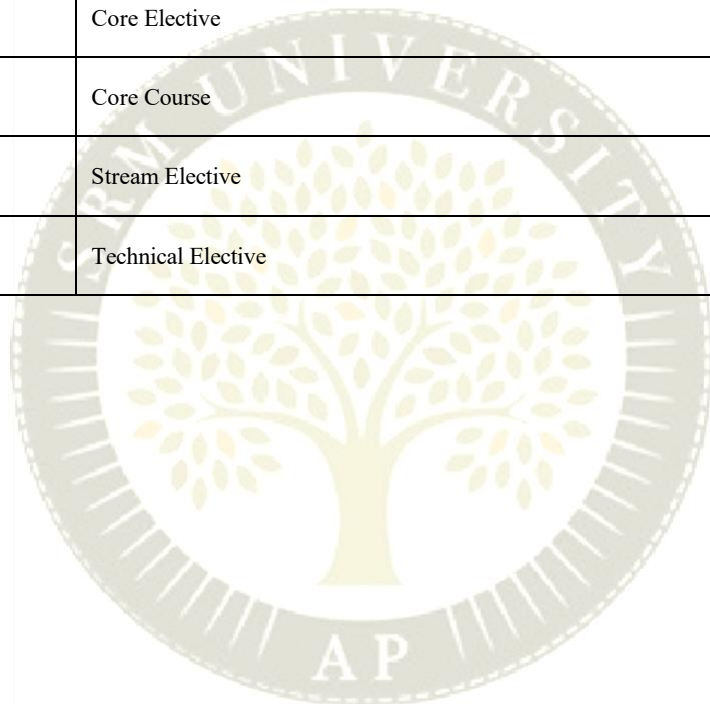
**B.Tech. Computer Science and Engineering
Curriculum**

(Applicable to 2024 Regulation)



**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	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	U VAC	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	D 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	SAEC	Problem Solving Skills	1	0	1	2
2	VAC	U VAC	Co-Curricular Activities	0	0	2	2*
3	SEC	D SEC	Coding Skills - I	0	0	2	2
4	Core	CC	OOPS with C++	3	0	1	4
5	Core	CC	Discrete Mathematics	3	0	0	3
6	Core	CC	Design and Analysis of Algorithms	3	0	1	4
7	Core	CC	Digital Electronics	3	0	1	4
8	Elective	OE	Open Elective / Minor	3	0	0	3
Semester Total				16	0	6	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*
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	Elective	OE	Open Elective / Minor	3	0	0	3
Semester Total				12	0	8	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	SEC	E SEC	Career Skills - I	1	0	1	2
3	Core	CC	Operating Systems	3	0	1	4
4	Core	CC	Machine Learning	3	0	1	4
5	Core	CC	Advanced Java Programming	3	0	1	4
6	Core	CC	Computer Organization and Architecture	3	0	1	4
7	RDIP	RDIP	Summer Internship/				
			Mini Project/	0	0	2	2
			Research Project				
8	Elective	OE	Open Elective / Minor	3	0	0	3
Semester Total				16	0	7	23

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	SEC	E SEC	Career Skills – II	1	0	1	2
3	SEC	E SEC	Industry Standard Employability Soft skills II	1	0	1	2
4	Core	CC	Computer Networks	3	0	1	4
5	Core	CC	Software Engineering and Project Management	3	0	1	4
6	Elective	CE	Stream Elective – I	3	0	1	4
7	Elective	CE	Stream Elective – II	3	0	1	4
8	SEC	DEC	Coding Skill 3	0	0	2	2
Semester Total				14	0	12	24

SEMESTER - VII

S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Core	CC	Automata and Compilers Design	3	0	0	3
2	Elective	CE	Core Elective – I	3	0	0	3
3	Elective	CE	Core Elective – II	3	0	0	3
4	Elective	SE	Stream Elective – III	3	0	1	4
5	Elective	OE	Open Elective / Minor				
Semester Total				15	0	1	16

SEMESTER – VIII

S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	RDIP	RDIP	Major Project	0	0	10	10
2	Elective	SE	Stream Elective – IV	3	0	1	4
3	Elective	OE	Open Elective / Minor	3	0	0	3
Semester Total				6	0	11	17

Specialization: Artificial Intelligence and Machine Learning

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

Specialization: Cyber Security

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

Specialization: Big Data Analytics

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

Specialization: Distributed and Cloud Computing

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

Specialization: Internet of Things

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

Technical Electives							
S.NO	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Elective	TE	Human Computer Interaction	3	0	0	3
2	Elective	TE	Advanced Computer Architecture	3	0	0	3
3	Elective	TE	Natural Language Processing	3	0	0	3
4	Elective	TE	Computer Graphics	3	0	0	3
5	Elective	TE	Advanced Data Structures and Algorithms	3	0	0	3
6	Elective	TE	Distributed Operating Systems	3	0	0	3
7	Elective	TE	Data and Web Mining	3	0	0	3
8	Elective	TE	Complexity Theory	3	0	0	3
9	Elective	TE	Software Project Management	3	0	0	3
10	Elective	TE	Multimedia	3	0	0	3
11	Elective	TE	Deep Learning	3	0	0	3
12	Elective	TE	Advanced Database Management Systems	3	0	0	3
13	Elective	TE	Fog Computing	3	0	0	3
14	Elective	TE	Parallel Algorithms	3	0	0	3
15	Elective	TE	Web Services	3	0	0	3
16	Elective	TE	Advances in Data Mining	3	0	0	3
17	Elective	TE	Social Network Analysis	3	0	0	3
18	Elective	TE	Recommender Systems	3	0	0	3
19	Elective	TE	Computational and Complexity Theory	3	0	0	3
20	Elective	TE	Cryptography and Network Security	3	0	0	3
21	Elective	TE	Artificial Intelligence	3	0	0	3
22	Elective	TE	Machine Learning on Edge Computing	3	0	0	3
23	Elective	TE	Mobile and wireless security	3	0	0	3
24	Elective	TE	Internet protocols and networking	3	0	0	3
25	Elective	TE	Mobile application security testing	3	0	0	3
26	Elective	TE	IoT security	3	0	0	3
27	Elective	TE	Biometric Security	3	0	0	3
28	Elective	TE	Cyber Law	3	0	0	3
29	Elective	TE	Ethical Hacking	3	0	0	3
30	Elective	TE	Security audit and Risk Assessment	3	0	0	3
31	Elective	TE	Digital Forensics and Incident Response	3	0	0	3
32	Elective	TE	Security Analytics	3	0	0	3
33	Elective	TE	Multiview Geometry	3	0	0	3
34	Elective	TE	Quantum Computation	3	0	0	3
35	Elective	TE	UROP / Project	0	0	3	3
36	Elective	TE	Comprehensive Linux For IT Professionals	3	0	0	3
37	Elective	TE	ERP Solution for Digital Enterprises	3	0	0	3
38	Elective	TE	ERP Application Development and Data Platforms	3	0	0	3
39	Elective	TE	User Interface Design	3	0	0	3
40	Elective	TE	Flying Ad-hoc Networks	3	0	0	3
41	Elective	TE	Foundations of CMOS Microfabrication and Intelligent Process Modeling	3	0	0	3

Minor in Computer Science

S. No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	OE	OE	Computational Problem Solving	3	0	0	3
2	OE	OE	OOPS through Java	3	0	0	3
3	OE	OE	Advanced Python Programming	3	0	0	3
4	OE	OE	Relational Database Management Systems	3	0	0	3
5	OE	OE	Network and Web Programming	3	0	0	3
6	OE	OE	Project	3	0	0	3

Minor in Data Science

S. No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	OE	OE	Machine Learning	3	0	0	3
2	OE	OE	Data Analytics using Python	3	0	0	3
3	OE	OE	Deep Learning	3	0	0	3
4	OE	OE	Data warehousing and Mining	3	0	0	3
5	OE	OE	Project	3	0	0	3

Minor in AI and ML

S. No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	OE	OE	Machine Learning	3	0	0	3
2	OE	OE	Digital Image Processing	3	0	0	3
3	OE	OE	Deep Learning	3	0	0	3
4	OE	OE	Soft Computing	3	0	0	3
5	OE	OE	Project	3	0	0	3

Carrer Skill Courses

S. No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	SEC	E SEC	Advanced Data Structures and Algorithms	3	0	0	3
2	SEC	E SEC	Cloud Computing	3	0	0	3
3	SEC	E SEC	Full Stack Development Using Mern Stack	3	0	0	3