



**School of Engineering and Applied Sciences
B. Tech Computer Science and Engineering**

Academic Batch: 2020-2024

**Department of Computer Science Engineering
SRM University-AP, Andhra Pradesh**

Syllabus B. Tech in Computer Science Engineering

SEMESTER-I

S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	EGL 101	Communicative English	3	0	0	3
2	MAT 112	Single Variable Calculus	3	0	0	3
3	PHY 101/ CHE 101	Engineering Physics / Principles of Chemistry	3/2	0	0	3/2
4	PHY 101 L/ CHE 101 L	Engineering Physics Lab / Principles of Chemistry Lab	0	0	2	1
5	BIO 102 / ENV 111	Introductory Biology / Environmental Science	3/2	0	0	3/2
6	***/ENV 111 L	***/Environmental Science Lab	0/0	0/0	0/2	0/1
7	CSE 105	Introduction to Programming Using C	3	0	0	3
8	CSE 105 L	Introduction to Programming Using C Lab	0	0	2	1
9	ISES 101	Industry Specific Employability Skills	1	1	0	1
Total Required Credits from this Semester						18/17

SEMESTER-II

S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	MAT 121	Multi variable Calculus	3	0	0	3
2	MAT 221	Probability and Statistics for Engineers	3	0	0	3
3	ENG 111	Basic Electronics	3	0	0	3
4	ENG 111 L	Basic Electronics Lab	0	0	2	1
5	CSE 107	Data Structures	3	0	0	3
6	CSE 107 L	Data Structures Lab	0	0	2	1
7	CHE 101 / PHY 101	Principles of Chemistry / Engineering Physics	2/3	0	0	2/3
8	CHE 101 L/ PHY 101 L	Principles of Chemistry Lab / Engineering Physics Lab	0	0	2	1
9	BIO 102 / ENV 111	Introductory Biology / Environmental Science	2/3	0	0	2/3
10	***/ENV 111 L	***/Environmental Science Lab	0/0	0/0	2/0	1/0
11	ISES 102	Industry Specific Employability Skills-II	1	1	0	1
** No Lab for Biology						
Total Required Credits from this Semester						21/22

SEMESTER-III

S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	MAT 141	Discrete Mathematics	3	0	0	3
2	CSE 206	Object Oriented Programming with C++	3	0	0	3
3	CSE 206 L	Object Oriented Programming with C++ Lab	0	0	2	1
4	CSE 201	Design and Analysis of Algorithms	3	0	0	3

5	CSE 201 L	Design and Analysis of Algorithms Lab	0	0	2	1
6	ECE 211	Digital Electronics	2	1	0	3
7	ECE 211 L	Digital Electronics-Lab	0	0	2	1
8	CSE 106 L	Hands on Using Python	0	0	4	2
9	CSE 230	Industry Standard Coding Practice (ISCP)-1	0	0	4	1
10	ECO 121	Principles of Economics	3	0	0	3
11	ISES 201	Industry Specific Employability Skills-III	1	1	0	1
Total Required Credits from this Semester						22
SEMESTER-IV						
S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	HSE	Humanities Elective	3	0	0	3
2	MAT 131	Differential Equations	3	0	0	3
3	CSE 204	Computer Organization and Architecture	3	0	0	3
4	CSE 204 L	Computer Organization and Architecture Lab	0	0	2	1
5	CSE 301	Operating System	3	0	0	3
6	CSEC 301 L	Operating System Lab	0	0	2	1
7	CSE 207	Java Programming	3	0	0	3
8	CSE 207 L	Java Programming Lab	0	0	2	1
9	CSE 203	Formal Languages and Automata Theory	3	0	0	3
10	ISES 202	Industry Specific Employability Skills-IV	1	1	0	1
11	CSE 330	Industry Standard Coding Practice-2	0	0	4	1
Total Required Credits from this Semester						23
SEMESTER-V						
S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	MAT 211	Linear Algebra	3	0	0	3
2	CSE 303	Computer Networks	3	0	0	3
3	CSE 303 L	Computer Networks Lab	0	0	2	1
4	CSE 306	Compiler Design	3	0	0	3
5	CSE 306 L	Compiler Design Lab	0	0	2	1
6	CSE 304	Database Management System	3	0	0	3
7	CSE 304 L	Database Management System Lab	0	0	2	1
8	CSE SE 1	CS Stream Elective 1	3	0	0	3
9	CSE SE 1 L	CS Stream Elective 1 Lab	0	0	2	1
10	OE	Open Elective 1	3/4	0	0	3/4
11	CSE 331	Industry Standard Coding Practice-3	0	0	4	1
12	ISES 301	Industry Specific Employability Skills-V	1	1	0	0
Total Required Credits from this Semester						23/24

SEMESTER-VI

S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	CSE 305	Software Engineering	3	0	0	3
2	CSE 305 L	Software Engineering-Lab	0	0	2	1
3	OE	Open Elective 2	3/4	0	0	3/4
4	OE	Open Elective 3	3/4	0	0	3/4
5	CSE TE 1	CSE Technical Elective 1	3	0	0	3
6	CSE SE 2	CS Stream Elective 2	3	0	0	3
7	CSE SE 2 L	CS Stream Elective 2 Lab	0	0	2	1
8	CSE 340	UROP	0	0	6	3
9	ISES 302	Industry Specific Employability Skills-VI	1	1	0	0
Total Required Credits from this Semester						20/22

SEMESTER-VII

S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	CSE SE 3	CS Stream Elective 3	3	0	0	3
2	CSE SE 3 L	CS Stream Elective 3 Lab	0	0	2	1
3	CSE SE 4	CS Stream Elective 4	3	0	0	3
4	CSE SE 4 L	CS Stream Elective 4 Lab	0	0	2	1
5	CSE TE 2	CS Technical Elective 2	3	0	0	3
6	OE	Open Elective 4	3/4	0	0	3/4
7	OE	Open Elective 5	3/4	0	0	3/4
8	CSE 460 (PR)	Capstone Project Phase-I	0	0	12	6
Total Required Credits from this Semester						23/25

SEMESTER-VIII

S.No	COURSE CODE	COURSE NAME	L	T	P	C
1	OE	Open Elective-6	3/4	0	0	3/4
2	CSE 461 (PR)	Capstone Project Phase-II	0	0	12	6
Total Required Credits from this Semester						9/10
Total Credits						159/165

Course Category	Category Code	No of Courses	Credits in curriculum
Humanities and Social Sciences	HS	9	13
Basic Sciences	BS	11	25
Engineering Sciences	ES	10	18
Professional Core	C	23	48
Professional Elective	SE	8	16
	TE	2	6
Open Elective	OE	6	18/24
Project	PR	3	15
	Total	72	159/165

List of Stream Specific Electives						
Course Code	Course Name	L	T	P	C	
Artificial Intelligence and Machine Learning Stream						
SE 1	CSE 413	Artificial Intelligence	3	0	0	3
SE 1 L	CSE 413 L	Artificial Intelligence Lab	0	0	2	1
SE 2	CSE 336	Machine Learning	3	0	0	3
SE 2 L	CSE 336 L	Machine Learning Lab	0	0	2	1
SE 3	CSE 314	Digital Image Processing	3	0	0	3
SE 3 L	CSE 314 L	Digital Image Processing Lab	0	0	2	1
SE 4	CSE 412	Principles of Soft Computing	3	0	0	3
SE 4 L	CSE 412 L	Principles of Soft Computing Lab	0	0	2	1
Cyber Security Stream						
SE 1	CSE 337	Cryptography	3	0	0	3
SE 1 L	CSE 337 L	Cryptography Lab	0	0	2	1
SE 2	CSE 315	Network Security	3	0	0	3
SE 2 L	CSE 315 L	Network Security Lab	0	0	2	1
SE 3	CSE 410	Mobile and Wireless Security	3	0	0	3
SE 3 L	CSE 410 L	Mobile and Wireless Security Lab	0	0	2	1
SE 4	CSE 414	Internet Protocols and Networking	3	0	0	3
SE 4 L	CSE 414 L	Internet Protocols and Networking Lab	0	0	2	1
Big data Analytics Stream						
SE 1	CSE 310	Data warehousing and Mining	3	0	0	3
SE 1 L	CSE 310 L	Data warehousing and Mining Lab	0	0	2	1
SE 2	CSE 338	Applied Data Science	3	0	0	3
SE 2 L	CSE 338 L	Applied Data Science Lab	0	0	2	1
SE 3	CSE 417	Principles of Big data Management	3	0	0	3
SE 3 L	CSE 417 L	Principles of Big data Management Lab	0	0	2	1
SE 4	CSE 419	Information Retrieval	3	0	0	3
SE 4 L	CSE 419 L	Information Retrieval Lab	0	0	2	1
Distributed and Cloud Computing Stream						
SE 1	CSE 316	Distributed Systems	3	0	0	3
SE 1 L	CSE 316 L	Distributed Systems Lab	0	0	2	1
SE 2	CSE 318	Cloud Computing	3	0	0	3
SE 2 L	CSE 318 L	Cloud Computing Lab	0	0	2	1
SE 3	CSE 416	Cloud Data Management	3	0	0	3
SE 3 L	CSE 416 L	Cloud Data Management Lab	0	0	2	1
SE 4	CSE 418	Service Oriented Computing	3	0	0	3
SE 4 L	CSE 418 L	Service Oriented Computing Lab	0	0	2	1

Internet of Things Stream

SE 1	CSE 337	Cryptography	3	0	0	3
SE 1 L	CSE 337 L	Cryptography Lab	0	0	2	1
SE 2	CSE 318	Cloud computing	3	0	0	3
SE 2 L	CSE 318 L	Cloud computing Lab	0	0	2	1
SE 3	CSE 317	Embedded Systems	3	0	0	3
SE 3 L	CSE 317 L	Embedded Systems Lab	0	0	2	1
SE 4	CSE 319	IoT Design Protocols	3	0	0	3
SE 4 L	CSE 319 L	IoT Design Protocols Lab	0	0	2	1

List of Technical Electives

Course Code	Course Name	L	T	P	C
CSE 320	Web Programming	3	0	0	3
CSE 321	Human Computer Interaction	3	0	0	3
CSE 322	Advanced Computer Architecture	3	0	0	3
CSE 323	Natural Language Processing	3	0	0	3
CSE 324	Computer Graphics	3	0	0	3
CSE 325	Advanced Data Structures and Algorithms	3	0	0	3
CSE 326	Distributed Operating Systems	3	0	0	3
CSE 420	Data and Web Mining	3	0	0	3
CSE 421	Complexity Theory	3	0	0	3
CSE 422	Software Project Management	3	0	0	3
CSE 423	Multimedia	3	0	0	3
CSE 424	Deep learning	3	0	0	3
CSE 425	Advanced Database Management Systems	3	0	0	3
CSE 426	Fog Computing	3	0	0	3
CSE 427	Parallel Algorithms	3	0	0	3
CSE 428	Web Services	3	0	0	3
CSE 429	Advances in Data Mining	3	0	0	3