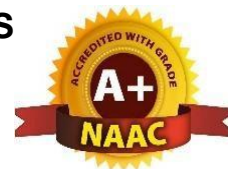


**SIDDHARTHA INSTITUTE OF TECHNOLOGY & SCIENCES
(UGC – AUTONOMOUS)**

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NBA and NAAC with 'A+' Grade

Narapally, Korremula Road, Ghatkesar, Medchal-Malkajgiri(Dist)-501 301

**B.Tech – Computer Engineering (Software Engineering)****Course Structure (SITS - R22)**

Applicable From 2022-23 Admitted Batch

Structure Breakup

S. No	Category	Breakup of credits (Total 160 credits)
1	Humanities and Social Sciences including Management Courses (HSMC)	7
2	Basic Sciences Courses(BS)	25.5
3	Engineering Sciences Courses including Workshop, Drawing basics of Electrical/Mechanical/Computer etc.(ES)	20.5
4	Professional Core Courses(PC)	58
5	Professional Electives(PE)	22
6	Open Electives(OE)	9
7	Project work, Seminar and Internship in Industry or elsewhere (PS)	18
8	Mandatory Courses	-
TOTAL		160

B.Tech - Computer Engineering (Software Engineering)

Course Structure (SITS - R22)

Applicable From 2022-23 Admitted Batch

I YEAR I SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2210001	Matrices and Calculus	BS	3	1	0	4	40	60	100
2	2210010	Engineering Chemistry	BS	3	1	0	4	40	60	100
3	2210503	Programming for Problem Solving	ES	3	0	0	3	40	60	100
4	2210201	Basic Electrical Engineering	ES	2	0	0	2	40	60	100
5	2210301	Computer Aided Engineering Graphics	ES	1	0	4	3	40	60	100
6	2210574	Elements of Computer Science & Engineering	PC	0	0	2	1	50	-	50
7	2210072	Engineering Chemistry Laboratory	BS	0	0	2	1	40	60	100
8	2210573	Programming for Problem Solving Laboratory	ES	0	0	2	1	40	60	100
9	2210271	Basic Electrical Engineering Laboratory	ES	0	0	2	1	40	60	100
		Induction Programme	-	-	-	-	-	-	-	-
TOTAL				12	2	12	20	370	480	850

I YEAR II SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2220002	Ordinary Differential Equations and Vector Calculus	BS	3	1	0	4	40	60	100
2	2220009	Applied Physics	BS	3	1	0	4	40	60	100
3	2220302	Engineering Workshop	ES	0	1	3	2.5	40	60	100
4	2220011	English for Skill Enhancement	HS	2	0	0	2	40	60	100
5	2220401	Electronic Devices and Circuits	ES	2	0	0	2	40	60	100
6	2220575	Python Programming Laboratory	ES	0	1	2	2	40	60	100
7	2220071	Applied Physics Laboratory	BS	0	0	3	1.5	40	60	100
8	2220073	English Language and Communication Skills Laboratory	HS	0	0	2	1	40	60	100
9	2220577	IT Workshop	ES	0	0	2	1	40	60	100
10	222MC01	Environmental Science	*MC	3	0	0	0	-	-	-
TOTAL				13	4	12	20	360	540	900

***MC-Satisfactory/Unsatisfactory**

II YEAR I SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2230403	Fundamentals of Digital Electronics	ES	3	0	0	3	40	60	100
2	2230504	Data Structures	PC	3	0	0	3	40	60	100
3	2230007	Computer Oriented Statistical Methods	BS	3	1	0	4	40	60	100
4	2230505	Computer Organization and Architecture	PC	3	0	0	3	40	60	100
5	2230506	Object Oriented Programming through Java	PC	3	0	0	3	40	60	100
6	2230578	Data Structures Lab	PC	0	0	3	1.5	40	60	100
7	2230579	Object Oriented Programming through Java Lab	PC	0	0	3	1.5	40	60	100
8	2236771	Data visualization- R Programming/ Power BI	PC	0	0	2	1	40	60	100
9	223MC03	Gender Sensitization Lab	*MC	0	0	2	0	-	-	-
TOTAL				15	1	10	20	320	480	800

II YEAR II SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2240008	Discrete Mathematics	BS	3	0	0	3	40	60	100
2	2240012	Business Economics & Financial Analysis	HS	3	0	0	3	40	60	100
3	2240507	Operating Systems	PC	3	0	0	3	40	60	100
4	2246602	Formal Languages and Automata Theory	PC	3	0	0	3	40	60	100
5	2245601	Software Engineering	PC	3	0	0	3	40	60	100
6	2240580	Operating Systems Lab	PC	0	0	2	1	40	60	100
7	2245671	Software Engineering Lab	PC	0	0	2	1	40	60	100
8	224PS01	Real-time Research Project/ Field Based Research Project	PS	0	0	4	2	50	-	50
9	2246772	Node JS/ React JS/ Django	PC	0	0	2	1	40	60	100
10	224MC02	Constitution of India	*MC	3	0	0	0	-	-	-
TOTAL				18	0	10	20			

***MC-Satisfactory/Unsatisfactory**

III YEAR I SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2256201	Computer Networks	PC	3	0	0	3	40	60	100
2	2250508	Database Management Systems	PC	3	0	0	3	40	60	100
3	2255626	Software Requirements & Estimation	PC	3	1	0	4	40	60	100
4		Professional Elective – I	PE	3	0	0	3	40	60	100
5		Professional Elective – II	PE	3	0	0	3	40	60	100
6	22562E1	Computer Networks Lab	PC	0	0	2	1	40	60	100
7	2250581	Database Management Systems Lab	PC	0	0	2	1	40	60	100
8	2250074	Advanced English Communication Skills Lab	HS	0	0	2	1	40	60	100
9	2255672	UI design- Flutter	PC	0	0	2	1	40	60	100
10	225MC04	Intellectual Property Rights	*MC	3	0	0	0	-	-	-
TOTAL				18	1	08	20	360	540	900

III YEAR II SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	22666A3	Compiler Design	PC	3	0	0	3	40	60	100
2	22656A5	Software Testing Methodologies	PC	3	0	0	3	40	60	100
3	22605A1	Design and Analysis of Algorithms	PC	3	0	0	3	40	60	100
4		Professional Elective – III	PE	3	0	0	3	40	60	100
5		Open Elective – I	OE	3	0	0	3	40	60	100
6	22666E3	Compiler Design Lab	PC	0	0	2	1	40	60	100
7	22656E2	Software Testing Lab	PC	0	0	2	1	40	60	100
8		Professional Elective - III Lab	PC	0	0	2	1	40	60	100
9	226PS02	Industrial Oriented Mini Project/ Internship/ Skill Development Course (Big data-Spark)	PS	0	0	4	2	-	100	100
10	226MC01	Environmental Science	*MC	3	0	0	0	-	-	-
TOTAL				18	0	8	20	320	580	900

***MC-Satisfactory/Unsatisfactory**

****MC-Environmental Science in III Yr II Sem Should be Registered by Lateral Entry Students Only.**

IV YEAR I SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2275627	Agile Software Development	PC	3	0	0	3	40	60	100
2	22766A1	Machine Learning	PC	3	0	0	3	40	60	100
3		Professional Elective – IV	PE	3	0	0	3	40	60	100
4		Professional Elective – V	PE	3	0	0	3	40	60	100
5		Open Elective – II	OE	3	0	0	3	40	60	100
6	2275673	Agile Software Development Lab	PC	0	0	2	1	40	60	100
7	22766E1	Machine Learning Lab	PC	0	0	2	1	40	60	100
8	227PS03	Project Stage – I	PS	0	0	6	3	100	-	100
TOTAL				15	0	10	20	380	420	800

IV YEAR II SEMESTER

S. No.	Course Code	Course Name	Course Area	Periods per week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2280016	Organizational Behavior	PE	3	0	0	3	40	60	100
2		Professional Elective – VI	PE	3	0	0	3	40	60	100
3		Open Elective – III	OE	3	0	0	3	40	60	100
4	228PS04	Project Stage – II including Seminar	PS	0	0	22	11	40	60	100
TOTAL				9	0	22	20	160	240	400

***MC-Satisfactory/Unsatisfactory**

#Skill Course - 1 credit with 2 Practical Hours

Professional Elective (PE) Courses**PE-I: Professional Elective - I**

S. No.	Course Code	Course Title
1	22567A3	Data Warehousing and Business Intelligence
2	22566A2	Artificial Intelligence
3	22505A3	Web Programming
4	22505A2	Image Processing
5	22505A4	Computer Graphics

PE-II: Professional Elective – II

S. No.	Course Code	Course Title
1	22567B1	Mining Massive Datasets
2	22567A9	Information Retrieval Systems
3	22569A8	Internet of Things
4	22556A1	DevOps
5	22556A2	Software Design Methodologies

PE-III: Professional Elective – III

S. No.	Course Code	Course Title
1	22656A6	Object Oriented Analysis & Design
2	22667A3	Introduction to Data Science
3	22605A7	Scripting Languages
4	22662A4	Mobile Application Development
5	22662A1	Cryptography and Network Security

PE-III Lab: Professional Elective – III Lab

S. No.	Course Code	Course Title
1	22656E3	Object Oriented Analysis & Design Lab
2	22667E2	Introduction to Data Science Lab
3	22605E1	Scripting Languages Lab
4	22662E2	Mobile Application Development Lab
5	22662E5	Cryptography and Network Security Lab

Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

PE-IV: Professional Elective – IV

S. No.	Course Code	Course Title
1	22769A2	Quantum Computing
2	22767B4	Data Visualization Techniques
3	22766A4	Natural Language Processing
4	22767B5	Information Storage Management
5	22756A3	Software Project Management

PE-V: Professional Elective – V

S. No.	Course Code	Course Title
1	2276703	Privacy Preserving in Data Mining
2	22767A7	Cloud Computing
3	22767B7	Data Stream Mining
4	22756A8	Software Quality Assurance
5	22767B6	Exploratory Data Analysis

PE-VI: Professional Elective – VI

S. No.	Course Code	Course Title
1	22856B2	Software Metrics
2	22862B6	Web security
3	22805B6	Computational Complexity
4	22862A6	Blockchain Technology
5	22805B5	Parallel and Distributed Computing

Open Elective (OE) Courses

S. No	Open Elective	Course Code	Course Title
1	Open Elective- I	2265601	Software Engineering
		22656A5	Software Testing Methodologies
2	Open Elective–II	2276201	Computer Networks
		22756A3	Software Project Management
3	Open Elective-III	22805A3	Web Programming
		22856A8	Software Quality Assurance

Note: Open Elective subject's syllabus is provided in a separate document. Student should take open electives from the list of offered by other departments/branches only.