

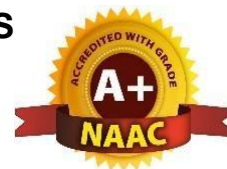


**SIDDHARTHA INSTITUTE OF TECHNOLOGY & SCIENCES**  
(UGC – AUTONOMOUS)

(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 - Electronics and Communication 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)	9
2	Basic Sciences Courses(BS)	18.5
3	Engineering Sciences Courses including Workshop, Drawing basics of Electrical/Mechanical/Computer etc.(ES)	21.5
4	Professional Core Courses(PC)	66
5	Professional Electives(PE)	18
6	Open Electives(OE)	9
7	Project work, Seminar and Internship in Industry or elsewhere (PS)	18
8	Mandatory Courses	-
<b>TOTAL</b>		<b>160</b>

**B.Tech - Electronics and Communication 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	2210009	Applied Physics	BS	3	1	0	4	40	60	100
3	2210502	C Programming for Engineers	ES	3	0	0	3	40	60	100
4	2210302	Engineering Workshop	ES	0	1	3	2.5	40	60	100
5	221001	English for Skill Enhancement	HS	2	0	0	2	40	60	100
6	2210477	Elements of Electronics and Communication Engineering	PC	0	0	2	1	50	-	50
7	2210071	Applied Physics Laboratory	BS	0	0	3	1.5	40	60	100
8	2210572	C Programming Engineers Laboratory	ES	0	0	2	1	40	60	100
9	2210073	English Language and Communication Skills Laboratory	HS	0	0	2	1	40	60	100
10	221MC01	Environmental Science	*MC	3	0	0	0	-	-	-
		Induction Programme		-	-	-	-	-	-	-
<b>TOTAL</b>				<b>14</b>	<b>3</b>	<b>12</b>	<b>20</b>	<b>370</b>	<b>480</b>	<b>850</b>

**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	2220010	Engineering Chemistry	BS	3	1	0	4	40	60	100
3	222031	Computer Aided Engineering Graphics	ES	1	0	4	3	40	60	100
4	2220201	Basic Electrical Engineering	ES	2	0	0	2	40	60	100
5	2220401	Electronic Devices and Circuits	PC	2	0	0	2	40	60	100
6	2220576	Applied Python Programming Laboratory	ES	0	1	2	2	40	60	100
7	2220072	Engineering Chemistry Laboratory	BS	0	0	2	1	40	60	100
8	2220271	Basic Electrical Engineering Laboratory	ES	0	0	2	1	40	60	100
9	2220478	Electronic Devices and Circuits Laboratory	PC	0	0	2	1	40	60	100
<b>TOTAL</b>				<b>11</b>	<b>3</b>	<b>12</b>	<b>20</b>	<b>360</b>	<b>540</b>	<b>900</b>

**\*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	2230003	Transform Calculus, Numerical Methods and Complex Variables	ES	3	1	0	4	40	60	100
2	2230426	Analog Circuits	PC	3	0	0	3	40	60	100
3	2230203	Network Analysis and Synthesis	ES	3	0	0	3	40	60	100
4	2230427	Digital Logic Design	PC	3	0	0	3	40	60	100
5	2230428	Signals and Systems	PC	3	1	0	4	40	60	100
6	2230479	Analog Circuits Laboratory	PC	0	0	2	1	40	60	100
7	2230480	Digital logic Design Laboratory	PC	0	0	2	1	40	60	100
8	2230481	Basic Simulation Laboratory	PC	0	0	2	1	40	60	100
9	223MC02	Constitution of India	*MC	3	0	0	0	-	-	-
<b>TOTAL</b>				<b>18</b>	<b>2</b>	<b>6</b>	<b>20</b>	<b>320</b>	<b>480</b>	<b>800</b>

**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	2240429	Probability Theory and Stochastic Processes	PC	3	0	0	3	40	60	100
2	2240430	Electromagnetic Fields and Transmission Lines	PC	3	0	0	3	40	60	100
3	2240431	Analog and Digital Communications	PC	3	0	0	3	40	60	100
4	2240432	Linear and Digital IC Applications	PC	3	0	0	3	40	60	100
5	2240433	Electronic Circuit Analysis	PC	3	0	0	3	40	60	100
6	2240482	Analog and Digital Communications Laboratory	PC	0	0	2	1	40	60	100
7	2240483	Linear and Digital IC Applications Laboratory	PC	0	0	2	1	40	60	100
8	2240484	Electronic Circuit Analysis Laboratory	PC	0	0	2	1	40	60	100
9	224PS01	Real Time Project / Field Based Project	PS	0	0	4	2	50	-	50
10	224MC04	Gender Sensitization Lab	*MC	0	0	2	0	-	-	-
<b>TOTAL</b>				<b>15</b>	<b>0</b>	<b>12</b>	<b>20</b>	<b>370</b>	<b>480</b>	<b>850</b>

**\*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	2250434	Microcontrollers	PC	3	1	0	4	40	60	100
2	2256901	IoT Architectures and Protocols	PC	3	0	0	3	40	60	100
3	2250204	Control Systems	PC	3	1	0	4	40	60	100
4	2250012	Business Economics & Financial Analysis	HS	3	0	0	3	40	60	100
5		Professional Elective – I	PE	3	0	0	3	40	60	100
6	2250485	Microcontrollers Laboratory	PC	0	0	2	1	40	60	100
7	2256973	IoT Architectures and Protocols Laboratory	PC	0	0	2	1	40	60	100
8	2250074	Advanced English Communication Skills Laboratory	HS	0	0	2	1	40	60	100
9	225MC03	Intellectual Property Rights	*MC	3	0	0	0	-	-	-
<b>TOTAL</b>				<b>18</b>	<b>2</b>	<b>6</b>	<b>20</b>	<b>320</b>	<b>480</b>	<b>800</b>

**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	2260435	Antennas and Wave Propagation	PC	3	0	0	3	40	60	100
2	22604A1	Digital Signal Processing	PC	3	0	0	3	40	60	100
3	2260403	CMOS VLSI Design	PC	3	0	0	3	40	60	100
4		Professional Elective - II	PE	3	0	0	3	40	60	100
5		Open Elective – I	OE	3	0	0	3	40	60	100
6	2260486	Digital Signal Processing Laboratory	PC	0	0	2	1	40	60	100
7	2260487	CMOS VLSI Design Laboratory	PC	0	0	2	1	40	60	100
8	2260488	Advanced Communication Laboratory	PC	0	0	2	1	40	60	100
9	226PS02	Industry Oriented Mini Project/ Internship	PS	0	0	4	2	-	100	100
10	226MC01	Environmental Science	**MC	3	0	0	0	-	-	-
<b>TOTAL</b>				<b>18</b>	<b>0</b>	<b>10</b>	<b>20</b>	<b>320</b>	<b>580</b>	<b>900</b>

\*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	2270437	Microwave and Optical Communications	PC	3	1	0	4	40	60	100
2		Professional Elective – III	PE	3	0	0	3	40	60	100
3		Professional Elective – IV	PE	3	0	0	3	40	60	100
4		Open Elective – II	OE	3	0	0	3	40	60	100
5	2270015	Professional Practice, Law & Ethics	HS	3	0	0	2	40	60	100
6	2270489	Microwave and Optical Communications Laboratory	PC	0	0	4	2	40	60	100
7	227PS03	Project Stage – I	PS	0	0	6	3	100	-	100
<b>TOTAL</b>				<b>15</b>	<b>1</b>	<b>10</b>	<b>20</b>	<b>340</b>	<b>360</b>	<b>700</b>

**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		Professional Elective – V	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
<b>TOTAL</b>				<b>9</b>	<b>0</b>	<b>22</b>	<b>20</b>	<b>160</b>	<b>240</b>	<b>400</b>

**\*MC-Satisfactory/Unsatisfactory**

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

S. No.	Course Code	Course Title
1	22505B7	Computer Organization & Operating Systems
2	22505B8	Data Communications and Computer Networks
3	22504A5	Electronic Measurements and Instrumentation

**PE-II: Professional Elective - II**

S. No.	Course Code	Course Title
1	22604A6	Digital Image Processing
2	22604A7	Mobile Communications and Networks
3	22604A8	Embedded System Design

**PE-III: Professional Elective - III**

S. No.	Course Code	Course Title
1	22704A9	Radar Systems
2	22704B1	CMOS Analog IC Design
3	22705B9	Artificial Neural Networks

**PE-IV: Professional Elective - IV**

S. No.	Course Code	Course Title
1	22762A1	Cryptography and Network Security
2	22704B1	Satellite Communications
3	22704B2	Biomedical Instrumentation

**PE-V: Professional Elective - V**

S. No.	Course Code	Course Title
1	22866A2	Artificial Intelligence
2	22804B3	5G and beyond Communications
3	22866A1	Machine learning

**PE-VI: Professional Elective - VI**

S. No.	Course Code	Course Title
1	22805C1	Multimedia Database Management Systems
2	22804B4	System on Chip Architecture
3	22804B5	Wireless sensor Networks

**Open Elective (OE) Courses**

S. No	Open Elective	Course Code	Course Title
1	Open Elective- I	22604G1	Fundamentals of Internet of Things
		22604G2	Principles of Signal Processing
		22604G3	Digital Electronics for Engineering
2	Open Elective–II	22704G4	Electronic Sensors
		22704G5	Electronics for Health Care
		22704G6	Telecommunications for Society
3	Open Elective-III	22804G7	Measuring Instruments
		22804G8	Communication Technologies
		22804G9	Fundamentals of Social Networks

**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.*