FACULTY OF ENGINEERING

Scheme of Instruction & Examination

For

Four Year Degree Programme of

Bachelor of Engineering (B.E.)

In

ELECTRONICS AND COMMUNICATION ENGINEERING

(Accredited by NBA)

(With effect from the academic year 2021–22)

Estd. 2008

STANLEY COLLEGE OF ENGINEERING AND TECHNOLOGY FOR WOMEN (AUTONOMOUS)

(Affiliated to Osmania University)

(Accredited by NAAC with "A" Grade)

ABIDS, HYDERABAD-500001, Telangana.

Abbreviation	Meaning
HS	Humanities, Social Sciences and Management
BS	Basic Sciences including Mathematics, Physics and Chemistry
ES	Engineering Sciences including Workshop, Drawing, Basic Electrical / Electronics
PC	Professional Core Courses
PE	Professional Elective Courses
OE	Open Elective Courses
PW	Project Work
MC	Mandatory Courses
AC	Audit Courses
PY	Philosophy
EC	Electronics and Communication Engineering.
CE	Civil Engineering,
MP	Mechanical / Production Engineering
IT	Information Technology
CS	Computer Science Engineering
EE	Electrical and Electronics Engineering
CM	Computer Engineering
AD	Artificial Intelligence and Data Science
L	Lecture
T	Tutorial
P	Practical
G	Grade
D	Drawing
CIE	Continuous Internal Evaluation
SEE	Semester End Evaluation
	Each contact hour is a clock hour
	The duration of the Practical class is two hours; however, it can be extended wherever necessary, to enable the student to complete the experiment.

Keywords	Definition
HS	Courses offered in the area of humanities and social sciences like communication & managerial skills.
BS	Courses of foundational nature in the areas of Mathematics, Physics, Chemistry, Biology etc.
ES	Courses belonging to the basic evolutionary aspects of a Particular Engineering from all other branches of Engineering.
PC	Courses that are fundamental and compulsory constituents of the respective engineering discipline.
PE	Courses those are discipline-specific to stream line the graduates to different emerging fields as per their choice.
OE	Courses of interdisciplinary nature offered to all the students of various programmes across the Institute.
PW	To make a perfect, Hands-on experienced Professionals.
MC	Compulsory non-credit courses that a student need to study to become a responsible citizen, as per supreme court guidelines.
AC	Audit courses can help the student to get awareness of different issues which enhance their skill sets to improve their employability.

SCHEME OF INSTRUCTION & EXAMINATION

(ELECTRONICS AND COMMUNICATION ENGINEERING)

I. Induction Program

SMC904XX **Induction Program (Mandatory)**	**3 weeks duration**
I Induction program for students to be offered right at the start of the first year	• Physical Activity • Creative Arts • Universal Human Values • Literary • Proficiency Modules • Lectures by Eminent People • Visits to local Areas • Familiarization to Dept./Branch & Innovations

B.E. I- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
Three Week Induction Program										
1.	SBS101MT	Mathematics-I	3	1	-	4	40	60	3	4
2.	SBS903CH	Chemistry	3		-	3	40	60	3	3
3.	SES101CS	Programming for Problem Solving	3	-	-	3	40	60	3	3
4.	SES102EE	Fundamentals of Electrical Engineering	3		-	3	40	60	3	3
5.	SMC905CE	Environmental Science	2	-	-	2	40	60	3	0
6.	SAC901EC	Design Thinking	2	-	-	2	50			0
Practical/Laboratory Course										
1.	SBS913CH	Chemistry Lab	-	-	4	4	40	60	3	2
2.	SES915ME	Engineering Graphics & Design	1	-	4	5	40	60	3	3
3.	SES112EE	Fundamentals of Electrical Engineering Lab	-	-	4	4	40	60	3	2
4.	SES111CS	Programming for Problem Solving Lab			4	4	40	60	3	2
Total			**17**	**1**	**16**	**34**	**410**	**540**	**27**	**22**

B.E. II- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SHS901EG	English	2		-	2	40	60	3	2
2.	SBS909PH	Engineering Physics	3		-	3	40	60	3	3
3.	SBS201MT	Mathematics-II	3	1	-	4	40	60	3	4
4.	SPC201EC	Circuit theory	3		-	3	40	60	3	3
5.	SMC906PO	Indian Constitution	2		-	2	40	60	3	0
6.	SMC907PY	Essence of Indian Traditional Knowledge	2		-	2	40	60	3	0
Practical/Laboratory Course										
1.	SHS911EG	English Lab			2	2	40	60	3	1
2.	SBS919PH	Engineering Physics Lab	-	-	4	4	40	60	3	2
3.	SES914ME	Workshop			6	6	40	60	3	3
4.	SPC211EC	Circuit Theory Lab			2	2	40	60	3	1
5.	SPW211EC	Field Work	The students have to undergo a Summer Field Work for two weeks duration after II semester and should submit a report for which credits will be awarded.				50	-	-	**1**
Total			**15**	1	**14**	**30**	**450**	**600**	**30**	**20**

B.E. III- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SHS301DM	Managerial Economics & Accountancy	3	1	-	4	40	60	3	4
2.	SBS303MT	Probability Theory and Stochastic Process	3	1	-	4	40	60	3	4
3.	SPC301EC	Electronic Devices and Circuits	3		-	3	40	60	3	3
4.	SPC302EC	Electromagnetic Theory and Transmission Lines	3		-	3	40	60	3	3
5.	SPC303EC	Digital System Design	3		-	3	40	60	3	3
Practical/Laboratory Course										
1.	SES315EC	Data Structures Lab	2		2	4	40	60	3	3
2.	SPC311EC	Electronic Devices Lab	-	-	2	2	40	60	3	1
3.	SPC312EC	Digital System Design Lab			2	2	40	60	3	1
Total			**17**	**2**	**6**	**25**	**360**	**540**	**24**	**22**

B.E. IV- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SPC401EC	Analog Electronic Circuits	3		-	3	40	60	3	3
2.	SPC402EC	Signals & Systems	3		-	3	40	60	3	3
3.	SPC403EC	Integrated Circuits and Applications	3	1	-	4	40	60	3	4
4.	SPC404EC	Computer Organization and Architecture	3		-	3	40	60	3	3
5.	SPC405EC	Antennas and Wave Propagation	3		-	3	40	60	3	3
Practical/Laboratory Course										
1.	SPC411EC	Analog Electronic Circuits Lab	-	-	2	2	40	60	3	1
2.	SPC412EC	Integrated Circuits Lab			2	2	40	60	3	1
3.	SPC413EC	Antenna Lab			2	2	40	60	3	1
4.	SPW412EC	**Internship- 1**	The students have to undergo an Internship of 4 week duration after IV- Semester SEE				50			1
Total			**15**	**1**	**6**	**23**	**370**	**480**	**24**	**20**

B.E. V- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SPC501EC	Digital Signal Processing	3	1		4	40	60	3	4
2.	SPC502EC	Microcontrollers	3			3	40	60	3	3
3.	SPC503EC	Automatic Control Systems	3	1		4	40	60	3	4
4.	SPE 5XX EC	Professional Elective –I	3			3	40	60	3	3
5.	SOE 6XX YY	Open Elective-I	3	1		4	40	60	3	4
6.	SAC903ME	Elements of Mechanical Engineering	2	-	-	2	50	-	-	0
Practical/Laboratory Course										
1.	SPC511EC	S & S Lab	-	-	2	2	40	60	3	1
2.	SPC512EC	Microcontrollers Lab			2	2	40	60	3	1
3.	SPW513EC	Mini Project & Industrial Visit			2	2	50		-	1
Total			**17**	**3**	**6**	**26**	**380**	**420**	**21**	**21**

B.E. VI- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SPC601EC	Analog and Digital Communications	3	1		4	40	60	3	4
2.	SPC602EC	Computer Networks	3			3	40	60	3	3
3.	SPC603EC	Microwave Techniques	3			3	40	60	3	3
4.	PE5XXEC	Professional Elective –II	3			3	40	60	3	3
5.	OE6XX YY	Open Elective –II	3	1		4	40	60	3	4
Practical/Laboratory Course										
1.	SPC611EC	Communications Lab			2	2	40	60	3	1
2.	SPC612EC	Computer Networks Lab			2	2	40	60	3	1
3.	SPC613EC	Microwave Lab			2	2	40	60	3	1
4.	SPW615EC	Internship- 2	The students have to undergo an Internship of 4 week duration after VI- Semester SEE				50		-	**1**
Total			**15**	2	**6**	**23**	**370**	**480**	**24**	**21**

B.E. VII- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SPC701EC	VLSI Design	3			3	40	60	3	3
2.	SPE5XXEC	Professional Elective –III	3			3	40	60	3	3
3.	SPE5XXEC	Professional Elective –IV	3			3	40	60	3	3
4.	SOE6XX YY	Open Elective-III	3	1		4	40	60	3	4
5.	SOE6XX YY	Open Elective-IV	3	1		4	40	60	3	4
Practical/Laboratory Course										
1.	SPC711EC	VLSI Design Lab	-	-	2	2	40	60	3	1
2.	SPC712EC	Internet of Things Lab			2	2	40	60	3	1
3.	SPW716EC	Project-1			6	6	40			3
4.	SPW717EC	Technical Seminar			2	2	50			1
Total			**15**	**2**	**12**	**29**	**370**	**420**	**21**	**23**

B.E. VIII- Semester

S. No.	Course Code	Course Title	Scheme of Instruction				Scheme of Examination			Credits
			L	T	P/D	Contact Hrs/Wk	CIE	SEE	SEE Duration in Hrs	
Theory Course										
1.	SPE5XXEC	Professional Elective-V	3	-	-	3	40	60	3	3
2.	SPW818EC	Project -2	-	-	16	-	40	120	-	8
Total			**3**	**-**	**16**	**3**	**80**	**180**	**3**	**11**

List of Project Works (PW)

S No	Course Code	Semester	Name of the Course
1	SPW211EC	II	Field Work
2	SPW412EC	IV	Internship - 1
3	SPW513EC	V	Mini Project & Industrial Visit
4	SPW615EC	VI	Internship - 2
5	SPW716EC	VII	Project-1
6	SPW717EC	VII	Technical Seminar
7	SPW818EC	VIII	Project -2

List of Mandatory Course (MC)

S No	Course Code	Mandatory Course -Subject Name
1	MC 904	Induction Program
2	MC 905 CE	Environmental Science
3	MC 906 PO	Indian Constitution
4	MC 907 PY	Essence of Indian Traditional Knowledge

List of Audit Course (AC)

S No	Course Code	Audit Course -Subject Name
1	MC 908 EC	Design Thinking
2	SAC903ME	Elements of Mechanical Engineering

List of Professional Electives

Professional Elective -1			
S.No	**Course Code**	**Domain**	**Name of the Course**
1	SPE501EC	IoT	Real Time Operating Systems
2	SPE502EC	VLSI	Analog VLSI Design
3	SPE503EC	Wireless communication	Satellite Communication And RADAR Engineering
4	SPE504EC	Image processing	Array signal processing
5	SPE505EC	ML & DS	Information Theory Coding

Professional Elective -2			
S No	**Course Code**	**Domain**	**Name of the Course**
1	SPE506EC	IoT	Robotics Automation
2	SPE507EC	VLSI	Low Power VLSI Design
3	SPE508EC	Wireless communication	Wireless Ad Hoc Sensor Networks
4	SPE509EC	Image processing	Modern digital signal processing
5	SPE 510 EC	ML & DS	Soft Computing Techniques

Professional Elective -3			
S No	**Course Code**	**Domain**	**Name of the Course**
1	SPE511EC	IoT	Embedded Security
2	SPE512EC	VLSI	ASIC Design
3	SPE513EC	Wireless communication	Spread Spectrum Communication
4	SPE514EC	Image processing	Digital image processing
5	SPE515EC	ML & DS	Statistical Data Analysis

Professional Elective -4			
S No	**Course Code**	**Domain**	**Name of the Course**
1	SPE 516EC	IoT	IoT Protocols
2	SPE 517 EC	VLSI	Design For Testability
3	SPE 518 EC	Wireless communication	Telecommunication Switching, Traffic & Networks
4	SPE 519 EC	Image processing	Multi-rate signal processing
5	SPE 520 EC	ML & DS	Artificial Neural Networks

Professional Elective -5			
S No	**Course Code**	**Domain**	**Name of the Course**
1	SPE 521 EC	IoT	Smart Cities
2	SPE 522 EC	VLSI	Mixed Signal Circuits & Systems
3	SPE 523 EC	Wireless communication	Radio Navigation Systems
4	SPE 524 EC	Image processing	Speech and video processing
5	SPE 525 EC	ML & DS	ML and Advanced ANN Models

List of Open Electives

Open Elective -1			
S No	**Course Code**	**Name of the Course**	**Course Offered By the Department**
1	SOE 601 EE	Illumination and Electric Traction systems	EEE
2	SOE 602 IT	Operating Systems	IT
3	SOE 603 CS	OOP using Java	**CSE/CME/AIDS**
4	SOE604CM	IAFM	MBA
5	SOE 605ME	Industrial Robotics	Mechanical Engineering

Open Elective -2			
S No	**Course Code**	**Name of the Course**	**Course Offered By the Department**
1	SOE606 CM	Digital Marketing	MBA
2	SOE607CS	Data Science Using R Programming	CSE/CME/AIDS
3	SOE 608IT	Cyber Security	IT
4	SOE 609 AD	Data Base Management	AIDS
5	SOE 610EE	Non-Conventional Energy Sources	EEE

Open Elective -3			
S No	**Course Code**	**Name of the Course**	**Course Offered By the Department**
1	SOE 611ME	Mechatronics	Mechanical Engineering
2	SOE 612CE	Road Safety Engineering	Civil Engineering
3	SOE 613IT	Software Engineering	IT
4	SOE 614CE	Disaster Management	Civil Engineering
5	SOE 615CM	Intellectual Property Rights	MBA

Open Elective -4			
S No	**Course Code**	**Name of the Course**	**Course Offered By the Department**
1	SOE 616CE	Geo Spatial Techniques	Civil Engineering
2	SOE 617EE	Reliability Engineering	EEE
3	SOE 618EE	Basics of Power Electronics	EEE
4	SOE 619HS	Soft Skills & Interpersonal Skills	H & S
5	SOE 620CM	Entrepreneurship	MBA

Open Electives not for ECE		
S No	**Course Code**	**Name of the Course**
1	SOE621EC	Signal Analysis and Transforming Techniques
2	SOE622EC	Digital System Design Using Verilog HDL
3	SOE623EC	Internet Of Things
4	SOE624EC	Embedded Systems
5	SOE625EC	Fundamentals of IOT