Sharnbasva University, Kalaburagi

Scheme of Teaching and Examination 2022-23

[As per NEP, Outcome Based Education(OBE) and Choice Based Credit System(CBCS) Scheme]

(Effectivefromtheacademicyear2022-23)

Programme: B.Tech: Electronics and Communication Engineering

III SEMESTER

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	BS	22MATE31	Mathematics for EES-III	Mathematics	3	0	0	3	50	50	100	03
2	PCC	22EC32	Analog Circuits	ECE	3	1	0	3	50	50	100	04
3	PCC	22EC33	Digital System Design	ECE	3	0	0	3	50	50	100	03
4	PCC	22EC34	Network Analysis	ECE	3	0	0	3	50	50	100	03
5	PCC	22EC35	Sensors and Actuators	ECE	3	0	0	3	50	50	100	03
6	PCC	22ECL36	Analog Circuits Laboratory	ECE	0	0	2	3	50	50	100	01
7	PCC	22ECL37	Digital System Design Laboratory	ECE	0	0	2	3	50	50	100	01
8	PCC	22ECL38	Network Analysis Laboratory	ECE	0	0	2	3	50	50	100	01
9	PW	22PRJ39	Project-III	ECE	0	0	2	3	50	50	100	01
10	HSS	22HSM310B	Soft Skills	Humanities	1	0	0	3	50	50	100	01
11	AEC	22AEC311X	Ability Enhancement Course-III	ECE	0	0	2	3	50	50	100	01
Total					**16**	**1**	**10**	**33**	**550**	**550**	**1100**	**22**

Note: BS-Basic Science, PCC- Programme Core Course, PW-Project Work, AEC- Ability Enhancement Course, HSS-Humanity and Social Science, NCMC-Non Credit Mandatory Course

Project(PRJ): A batch of 4 students (Same branch or different branches) with a guide, may undertake one project.

Ability Enhancement Course-3												
Course code under 22AEC311X			**Course Title**									
22AEC311A			Analog Electronics Laboratory using Pspice/Mutlisim / Ltspice									
22AEC311B			Digital System Design Laboratory using Pspice/Multisim / Ltspice									
Courses prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs												
12	NCMC	22MATDIP31	Additional Mathematics– I	Mathematics	2	-	-	-	100	00	100	00

1) Non Credit Mandatory Courses (NCMC) Additional Mathematics-I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of B. Tech. programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the university examination. In case any student fails to secure the minimum 50% of the prescribed CIE marks, he/she shall be deemed to have secured F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s.
2) These courses shall not be mandatory for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTE Activity Points to be earned by students admitted to B.Tech. programme (For more details refer to Chapter 6,AICTE Activity Point Programme, Model Internship Guidelines): Over and above the academic grades, every regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other universities to fifth semester are required to earn 50 activity points from the year of entry to Sharnbasva University. The Activity Points earned shall be reflected on the students eighth semester Grade card. The activities can be spread over the years, any time during the semester weekend holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours' requirement should be fulfilled. Activity Points (noncredit) have no effect on SGPA/CGPA and shall not be considered for vertical progression. In case students fail to learn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the required activity points. Students hall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

Sharnbasva University, Kalaburagi

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(Effectivefromtheacademicyear2022-23)

Programme:B.Tech.: Electronics and Communication Engineering

IVSEMESTER

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	BS	22MATE41	Mathematics for EES-IV	Mathematics	3	0	0	3	50	50	100	03
2	PCC	22EC42	Analog and Digital Communication	ECE	3	0	0	3	50	50	100	03
3	PCC	22EC43	Microcontroller	ECE	3	0	0	3	50	50	100	03
4	PCC	22EC44	Signals and Systems	ECE	3	0	0	3	50	50	100	03
5	PCC	22EC45	Information Theory and Coding	ECE	3	0	0	3	50	50	100	03
6	PCC	22ECL46	Analog and Digital Communication Laboratory	ECE	0	0	2	3	50	50	100	01
7	PCC	22ECL47	Microcontroller Laboratory	ECE	0	0	2	3	50	50	100	01
8	PCC	22ECL48	Signals and Systems Laboratory	ECE	0	0	2	3	50	50	100	01
9	PW	22PRJ49	Project-IV	ECE	0	0	2	3	50	50	100	01
10	HSS	22UHV410	Universal Human Values	Humanities	2	1	0	3	50	50	100	03
11	AEC	22AEC411X	Ability Enhancement Course-IV	ECE	0	0	2	3	50	50	100	01
Total					**17**	**1**	**10**	**33**	**550**	**550**	**1100**	**23**

Note: BS-Basic Science, PCC- Programme Core Course, PW-Project Work, AEC- Ability Enhancement Course, HSS-Humanity and Social Science, NCMC-Non Credit Mandatory Course, OC-Online Course.

Project(PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities.

Ability Enhancement Course-4

Course code under 22AEC411X	**Course Title**
22AEC411A	Embedded C Basics
22AEC411B	PCB Design and Fabrication

Courses prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs

12	NCMC	22MATDIP41	Additional Mathematics–II	Mathematics	2	-	-	-	100	00	100	00

1) Non Credit Mandatory Courses (NCMC) Additional Mathematics-I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of B. Tech. programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the university examination. In case any student fails to secure the minimum 50% of the prescribed CIE marks, he/she shall be deemed to have secured F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s.
2) These courses shall not be mandatory for vertical progression, but completion of the courses shall be mandatory for the award of degree.

AICTE Activity Points to be earned by students admitted to B.Tech. programme (For more details refer to Chapter 6,AICTE Activity Point Programme, Model Internship Guidelines): Over and above the academic grades, every regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other universities to fifth semester are required to earn 50 activity points from the year of entry to Sharnbasva University. The Activity Points earned shall be reflected on the students eighth semester Grade card. The activities can be spread over the years, any time during the semester weekend holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours' requirement should be fulfilled. Activity Points (noncredit) have no effect on SGPA/CGPA and shall not be considered for vertical progression. In case students fail to learn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the required activity points. Students hall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

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Programme: B.Tech: Electronics and Communication Engineering

VSEMESTER

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	HSS	22HSM51	Management and Entrepreneurship Development	ECE	3	0	0	3	50	50	100	03
2	PCC	22EC52	Digital Signal Processing	ECE	3	1	0	3	50	50	100	04
3	PCC	22EC53	Electromagnetic waves and Antennas	ECE	3	0	0	3	50	50	100	03
4	PEC	22EC54X	Professional Elective Course-I	ECE	3	0	0	3	50	50	100	03
5	OEC	22XX55X	Open Elective Course-I	ECE	4	0	0	3	50	50	100	04
6	PCC	22ECL56	Digital Signal Processing Laboratory	ECE	0	0	2	3	50	50	100	01
7	PCC	22ECL57	Electromagnetic waves and Antennas Laboratory	ECE	0	0	2	3	50	50	100	01
8	PEC	22ECL58X	Professional Elective Course-I Laboratory	ECE	0	0	2	3	50	50	100	01
9	PW	22PRJ59	Project-V	ECE	0	0	2	3	50	50	100	01
10	AEC	22AEC510X	Ability Enhancement Course-V	ECE	0	0	2	3	50	50	100	01
Total					**16**	**1**	**10**	**30**	**500**	**500**	**1000**	**22**

Note:PCC- Programme Core Course, PEC- Professional Elective Course, PW-Project Work, HSS-Humanity and Social Science, OEC- Open Elective Course, AEC- Ability Enhancement Course,UHV- Universal Human Values.

Project(PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities.

Professional Elective Course-I			
Course code under 22EC54X	**Course Title**	**Course code under 22ECL58X**	**Course Title**
22EC541	Verilog HDL	22ECL581	Verilog HDL Laboratory
22EC542	Optical Fiber Communication	22ECL582	Optical Fiber Communication laboratory

Open Elective Course-I	
Coursecodeunder22XX55X	**Course Title**
22EC551	Internet of Things
22EC552	Microcontroller and Microprocessor

Ability Enhancement Course-V	
Coursecodeunder21EC510X	**Course Title**
22AEC510A	Research Article/Report Reading and Writing
22AEC510B	C++ Basics

AICTE Activity Points: In case students fail to earn the prescribed activity points, eighth semester Grade Card shall be issued only after earning the Required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

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Scheme of Teaching and Examination-2022-23

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(Effectivefromtheacademicyear2022-23)

Programme: B. Tech: Electronics and Communication Engineering

VISEMESTER

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	PCC	22EC61	VLSI Circuits	ECE	3	0	0	3	50	50	100	03
2	PCC	22EC62	Control system	ECE	2	1	0	3	50	50	100	03
3	PEC	22EC63X	Professional Elective Course-II	ECE	3	0	0	3	50	50	100	03
4	PEC	22EC64X	Professional Elective Course-III	ECE	3	0	0	3	50	50	100	03
5	OEC	22XX65X	Open Elective Course-II	ECE	4	0	0	3	50	50	100	04
6	PCC	22ECL66	VLSI Circuits Laboratory	ECE	0	0	2	3	50	50	100	01
7	PEC	22ECL67X	Professional Elective Course-II Laboratory	ECE	0	0	2	3	50	50	100	01
8	PEC	22ELC68X	Professional Elective Course-III Laboratory	ECE	0	0	2	3	50	50	100	01
9	PW	22PRJ69	Project-VI	ECE	0	0	2	3	50	50	100	01
10	HSS	22HSM610	Professional Ethics	ECE	1	0		3	50	50	100	01
11	AEC	22AEC611X	Ability Enhancement Course-VI	ECE	0	0	2	3	50	50	100	01
Total					**16**	**1**	**10**	**33**	**550**	**550**	**1000**	**22**

Note: PCC-Professional Core Course, PEC-Professional Elective Course, OEC-Open Elective Course, PW-Project Work, HSS-Humanity and Social Science, AEC- Ability Enhancement Course. UHV- Universal Human Values, OC-Online Course.

Project(PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities

Professional Elective Course-II

Course code under 22EC63X	Course Title	Course code under 22ECL67X	Course Title

22EC631	ARM Cortex M3 & Embedded Systems	22ECL671	Embedded Systems Laboratory
22EC632	Tiny Machine Learning	22ECL672	Machine Learning Laboratory
Professional Elective Course-III			
Course code under 22EC64X	**Course Title**	**Course code under 22ECL68X**	**Course Title**
22EC641	Programming using Python	22ECL681	Programming using Python Laboratory
22EC642	IoT Technology	22ECL682	IoT Technology Laboratory
Open Elective Course-II			
Course code under 22EC65X	**Course Title**		
22EC651	Embedded Systems		
22EC652	Introduction to UAV Electronics		
Ability Enhancement Course-VI			
Coursecodeunder22EC611X	**Course Title**		
22AEC611A	Antenna Design Simulation		
22AEC611B	Design of VLSI Circuits using Ltspice		
AICTE Activity Points: In case students fail to earn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the Required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.			

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Programme: B. Tech: Electronics and Communication Engineering

VIISEMESTER

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	PCC	22EC71	Computer Networks	ECE	3	0	0	3	50	50	100	03
2	PCC	22EC72	Mobile Communication and Networks	ECE	3	0	0	3	50	50	100	03
3	PCC	22EC73	Digital Image Processing	ECE	3	0	0	3	50	50	100	03
4	PEC	22EC74X	Professional Elective Course-IV	ECE	3	0	0	3	50	50	100	03
5	OEC	22XX75X	Open Elective Course-III	ECE	4	0	0	3	50	50	100	04
6	PCC	22ECL76	Computer Networks Laboratory	ECE	0	0	2	3	50	50	100	01
7	PCC	22ECL77	Digital Image Processing Laboratory	ECE	0	0	2	3	50	50	100	01
8	PEC	22ECL78X	Professional Elective Course-IV Laboratory	ECE	0	0	2	3	50	50	100	01
9	PW	22PRJ79	Project-VII	ECE	0	0	2	3	50	50	100	01
10	HSS	22HSM710	Industrial Psychology and Organizational Behaviour	Humanities	1	0	0	3	50	50	100	01
Total					**17**	**0**	**8**	**30**	**500**	**500**	**1000**	**21**

Note: PCC-Professional Core Course, PEC-Professional Elective Course, OEC-Open Elective Course, PW-Project Work, HSS-Humanity and Social Science, AEC- Ability Enhancement Course, OC-Online Course.

Project(PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities.

Professional Elective Course-4			
Course code under 22EC74X	**Course Title**	**Course code under 22ECL78X**	**Course Title**
22EC741	Power Electronics	22ECL781	Power Electronics Laboratory
22EC742	Low Power VLSI Design	22ECL782	Low Power VLSI Design Laboratory
Open Elective Course-3			
Course code under 21XX75X	**Course Title**		
22EC751	E-Waste Management		
22EC752	Domestic Electronics Equipment Maintenance		
22EC753	Research Methodology		
AICTE Activity Points : In case students fail to earn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the Required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.			

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Programme: B. Tech: Electronics and Communication Engineering

VIIISEMESTER

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P					
1	Project	22PRJ81	Research Project / Field Project - VIII	ECE	0	0	16	3	50	50	100	08
2	Internship	22ECI82	Internship	ECE	0	0	12	3	50	50	100	06
Total					**0**	**0**	**30**	**06**	**100**	**100**	**200**	**14**

Note:

PCC-Professional Core Course,PEC-ProfessionalElectiveCourse,OEC-OpenElectiveCourse,PW-ProjectWork,HSS-HumanityandSocialScience, AEC- Ability Enhancement Course.

Project(PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities.

Note: Project-8 Manufacturable and marketable project / Research project/Field Project.