Sharnbasva University, Kalaburagi

Scheme of Teaching and Examination 2024-25

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

(Effective from the academic year 2024-25)

Programme: B. Tech: ELECTRICAL AND ELECTRONICS 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	24MATE301	Engineering Mathematics -3 for EES	Mathematics	3	0	0	3	50	50	100	3
2	PC	24EE302	Electric Circuit Analysis	EEE	3	0	0	3	50	50	100	3
3	PC	24EE303	Transformers and Induction Motors	EEE	3	0	0	3	50	50	100	3
4	PC	24EE304	Analog and Digtal Electronics	EEE	3	0	0	3	50	50	100	3
5	PC	24EE305	Electromagnetic Field Theory	EEE	3	0	0	3	50	50	100	3
6	HSM	24HSM306	Communication Skills	EEE	2	0	0	2	50	50	100	2
7	PCL	24EEL307	Transformers and Induction Motors Laboratory	EEE	0	0	2	3	50	50	100	1
8	PCL	24EEL308	Analog and Digtal Electronics Laboratory	EEE	0	0	2	3	50	50	100	1
9	PCL	24EEL309	Electric Circuit Analysis Laboratory	EEE	0	0	2	3	50	50	100	1

10	MC	24KAN310/ 24AK310/ 24ENV310	Kannada Kali/ Ayda Kathegalu/ Environmental Study	EEE	1	0	0	3	50	50	100	0
11	PSI	24PRJ311	Project-3	EEE	0	0	2	3	50	50	100	1
				TOTAL	**18**	**0**	**8**	**32**	**550**	**550**	**1100**	**21**

Note: BS-Basic Science, PC-Professional Core Course, PW-Project Work, HSM-Humanity and Social Science, MC- Mandatory Course.

Project(PRJ): Based on the ability /abilities of the student/s and recommendations of the mentor, a single discipline or multidisciplinary mini project can be assigned to an individual student or to a group having not more than 4 students.

COURSES PRESCRIBED TO LATERAL ENTRY DIPLOMA HOLDERS ADMITTED TO III SEMESTER OF ENGINEERING PROGRAMS

10	NCMC	24MATDIP301	ADDITIONAL MATHEMATICS - I	MATHEMATICS	3	1	-	3	0	100	100	0

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 CIE test. In case any student fails to register for the said course/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, anytime during the semester weekends 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(non credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

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.

Sharnbasva University, Kalaburagi

Scheme of Teaching and Examination 2024-25

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

(Effective from the academic year 2024-25)

Programme: B. Tech: ELECTRICAL AND ELECTRONICS ENGINEERING

IV 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	24MATE401	Engineering Mathematics-4 for EES	Mathematics	3	0	0	3	50	50	100	3
2	PC	24EE402	Power Generation, Transmission and Distribution	EEE	3	0	0	3	50	50	100	3
3	PC	24EE403	DC Machines and Synchronous Machines	EEE	3	0	0	3	50	50	100	3
4	PC	24EE404	Control Systems	EEE	3	0	0	3	50	50	100	3
5	PC	24EE405	Electrical and Electronic Measurements	EEE	3	0	0	3	50	50	100	3
6	HSM	24HSM406	Operations Research		2	0	0	2	50	50	100	2
7	PCL	24EEL407	DC Machines and Synchronous Machines Laboratory	EEE	0	0	2	3	50	50	100	1
8	PCL	24EEL408	Control Systems Laboratory	EEE	0	0	2	3	50	50	100	1
9	PCL	24EEL409	Electrical and Electronic Measurements Laboratory	EEE	0	0	2	3	50	50	100	1

10	MC	24KAN410/ 24AK410/ 24ENV410	Kannada Kali/ Ayda Kathegalu/ Environmental Study	Kannada	1	0	0	3	50	50	100	0
11	PSI	24PRJ411	Project-4	EEE	0	0	2	3	50	50	100	1
				TOTAL	**18**	**0**	**8**	**32**	**550**	**550**	**1100**	**21**

Note: BS-Basic Science, PC-Professional Core Course, PW-Project Work, HSM-Humanity and Social Science, MC- Mandatory Course.

Project(PRJ): Based on the ability /abilities of the student/s and recommendations of the mentor, a single discipline or multidisciplinary mini project can be assigned to an individual student or to a group having not more than 4 students.

COURSES PRESCRIBED TO LATERAL ENTRY DIPLOMA HOLDERS ADMITTED TO III SEMESTER OF ENGINEERING PROGRAMS

10	NCMC	24MATDIP401	ADDITIONAL MATHEMATICS - II	MATHEMATICS	3	1	-	3	0	100	100	0

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 CIE test. In case any student fails to register for the said course/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, anytime during the semester weekends 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(non credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.

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(Effective from the academic year 2024-25)

Programme: B. Tech: ELECTRICAL AND ELECTRONICS ENGINEERING

V 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	HSM	24HSM501	Management & Entrepreneurship Development		3	0	0	3	50	50	100	3
2	PC	24EE502	Power System Analysis-1	EEE	3	1	0	3	50	50	100	4
3	PC	24EE503	Power Electronics	EEE	3	0	0	3	50	50	100	3
4	PC	24EE504	Switchgear and Protection	EEE	3	0	0	3	50	50	100	3
5	PE	24EE505X	Professional Elective Course-1	EEE	3	0	0	3	50	50	100	3
6	PCL	24EEL506	Electrical Drawing	EEE	0	0	2	3	50	50	100	1
7	PCL	24EEL507	Power Electronics Laboratory	EEE	0	0	2	3	50	50	100	1
8	PCL	24EEL508	Switchgear and Protection Laboratory	EEE	0	0	2	3	50	50	100	1
9	MC	24PEC509	Professional Ethics		1	0	0	3	100	0	100	0
10	PSI	24PRJ510	Project-5	EEE			2	3	50	50	100	1
				TOTAL	**16**	**1**	**8**	**30**	**550**	**450**	**1000**	**20**

Note: PC-Professional Core Course, PE-Professional Elective Course, PW-Project Work, HSM-Humanity and Social Science.	
Project (PRJ): Based on the ability /abilities of the student/s and recommendations of the mentor, a single discipline or multidisciplinary mini project can be assigned to an individual student or to a group having not more than 4 students.	
Professional Elective Course-1	
Course Code under 24EE505X	**Course Title**
24EE505A	Electric Vehicles
24EE505B	Utilization of Electrical Power
24EE505C	Linear Integrated Circuits and Applications
24EE505D	Modern Control Theory
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	

Sharnbasva University, Kalaburagi

Scheme of Teaching and Examination 2024-25

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(Effective from the academic year 2024-25)

Programme: B. Tech: ELECTRICAL AND ELECTRONICS ENGINEERING

VI 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	PC	24EE601	Microcontroller	EEE	3	1	0	3	50	50	100	4
2	PC	24EE602	Signals and Digital Signal Processing	EEE	3	1	0	3	50	50	100	4
3	PC	24EE603	Power System Analysis-2	EEE	3	0	0	3	50	50	100	3
4	PE	24EE604X	Professional Elective Course-2	EEE	3	0	0	3	50	50	100	3
5	OE	24EE605	Open Elective Course-1	EEE	3	0	0	3	50	50	100	3
6	PCL	24EEL606	Microcontroller Laboratory	EEE	0	0	2	3	50	50	100	1
7	PCL	24EEL607	Signals and Digital Signal Processing Laboratory	EEE	0	0	2	3	50	50	100	1
8	PCL	24EEL608	Power System Simulation Laboratory	EEE	0	0	2	3	50	50	100	1
9	PSI	24PRJ609	Project-6	EEE	0	0	2	3	50	50	100	1
				TOTAL	**15**	**2**	**8**	**27**	**450**	**450**	**900**	**21**

Note: PC-Professional Core Course, PE-Professional Elective Course, OE – Open Elective Course ,PW-Project Work.

Project (PRJ): Based on the ability /abilities of the student/s and recommendations of the mentor, a single discipline or multidisciplinary mini project can be assigned to an individual student or to a group having not more than 4 students.	
Professional Elective Course-2	
Course Code under 24EE604X	**Course Title**
24EE604A	Energy Auditing and Demand side Management
24EE604B	Smart Grid
24EE604C	Fuzzy Logic and Neural Networks
24EE604D	Embedded System Design
Open Elective Course-1	
Course Code under 24EE605	**Course Title**
24EE605	Programmable Logic Controller
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	

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Programme: B. Tech: ELECTRICAL AND ELECTRONICS ENGINEERING

VII 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	PC	24EE701	High Voltage Engineering	EEE	3	0	0	3	50	50	100	3
2	PE	24EE702X	Professional Elective Course-3	EEE	3	0	0	3	50	50	100	3
3	PE	24EE703X	Professional Elective Course-4	EEE	3	0	0	3	50	50	100	3
4	OE	24EE704	Open Elective Course-2	EEE	3	0	0	3	50	50	100	3
5	OE	24EE705	Open Elective Course-3	EEE	3	0	0	3	50	50	100	3
6	PCL	24EEL706	High Voltage Engineering Laboratory	EEE	0	0	2	3	50	50	100	1
7	PSI	24SEM707	Seminar	EEE	0	0	2					1
8	PSI	24PRJ708	Project-7	EEE	0	0	2	3	50	50	100	1
				TOTAL	**15**	**0**	**6**	**21**	**350**	**350**	**700**	**18**

Note: PC-Professional Core Course, PE-Professional Elective Course, OE – Open Elective Course ,PSI-Project Work,Seminarand internship in industry or elsewhere.

Project (PRJ): Based on the ability /abilities of the student/s and recommendations of the mentor, a single discipline or multidisciplinary mini project can be assigned to an individual student or to a group having not more than 4 students.

Professional Elective Course-3	
Course Code under 24EE702X	**Course Title**
24EE702A	Industrial Drives and Applications
24EE702B	AI Techniques for Electric and Hybrid Electric Vehicles
24EE702C	Power System Operation and Control
24EE702D	Big data Analytics in Power Systems
Professional Elective Course-4	
Course Code under 24EE703X	**Course Title**
24EE703A	Electrical Machine Design
24EE703B	Reactive Power Management
24EE703C	Special Electrical Machines
24EE703D	HVDC Transmission
Open Elective Course-2	
Course Code under 24EE704	**Course Title**
24EE704	Operation and Mentainance of Solar Electric Systems
Open Elective Course-3	
Course Code under 24EE705	**Course Title**
24EE705	Introduction to Electric Vehicles

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

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Programme: B. Tech: ELECTRICAL AND ELECTRONICS ENGINEERING

VIII 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	OE	24OL801	Open Elective Course-4 [Online Course] only through NPTEL		As per the online Scheme							3
2	PSI	24INT802	Research / Industry Internship	EEE	0	0	8	3	50	50	100	4
3	PSI	24PRJ803	Research / Innovative Project	EEE	0	0	24	3	50	50	100	12
				TOTAL	**0**	**0**	**32**	**6**	**100**	**100**	**200**	**19**

Project (PRJ): Based on the ability /abilities of the student/s and recommendations of the mentor, a single discipline or multidisciplinary mini project can be assigned to an individual student or to a group having not more than 4 students.

TYPES OF COURSES WITH CREDITS

Sl. No.	Category	Breakup of Credits	
		Percentage %	Credits
1	Basic Science	12.96%	21
2	Humanities, Social Science and Management Courses (HSM)	8.02%	13
3	Engineering Science Courses (ES)	6.79%	11
4	Engineering Science Laboratory Courses (ESL)	3.70%	6
5	Basic Science Laboratory Courses (BSL)	1.23%	2
6	Professional core courses (Specialization wise) (PC)	29.63%	48
7	Professional Elective courses (Specialization wise) (PE)	7.41%	12
8	Open Elective Courses (Cross Discipline Courses) (OE) and Online Course (OC)	7.41%	12
9	Professional Core Laboratory courses (PCL)	9.26%	15
10	Research Project work, Seminar and Research Internship in Industry or else where (PCI)	13.58%	22
11	Mandatory Audit Courses	0.00%	0
	Total	100.00	162