

**Department of Electrical Engineering**

**ANNEXURE –I**

**PROPOSED STRUCTURE**

**B. Tech. (Electrical)21-22 onwards**

  
**Approved in XXIV<sup>th</sup> Academic  
Council, Dated 23/07/2022**

Teaching and Evaluation Scheme from year 2022-23  
Second Year B. Tech. Program in Electrical Engineering

**Semester III**

Semester III Courses				Teaching Scheme			Continuous Evaluation in terms of Marks					
Sr No	Category	Course Code	Course Name	TH	T	PR	Credits	ISE I	ISE II	ISE III	ESE	Total
1	BSC	<del>MABS2002</del>	Mathematics –III	2	1	-	3	15	15	10	60	100
2	PC- I	EEPC2001	Network Analysis	3		-	3	15	15	10	60	100
3	PC- II	EEPC2002	Electrical Machines-I	3		-	3	15	15	10	60	100
4	PC-III	EEPC2003	Electrical Measurement & Instrumentation	3	-	-	3	15	15	10	60	100
5	PCIV	EEPC2004	Analog Electronic Circuits	3	-	-	3	15	15	10	60	100
6	PC- I	EEPC2005	Lab Network Analysis	-	-	2	1	25	-	-	25	50
7	PC-II	EEPC2006	Lab Analog Electronic Circuits	-	-	2	1	25	-	-	25	50
8	PC-III	EEPC2007	Lab: Electrical Machines-I	-	-	2	1	25	-	-	25	50
9	PC IV	EEPC2008	Lab Electrical Measurement & Instrumentation	-	-	2	1	25	-	-	25	50
10	OE- I		Open Elective - I	3	-	-	3	15	15	10	60	100
11	MC	<del>EEEC2010</del> INMC2010	Environmental Studies	3	-	-	-	15	15	10	60	100
<b>Total</b>				<b>17</b>	<b>1</b>	<b>08</b>	<b>22</b>	<b>190</b>	<b>90</b>	<b>60</b>	<b>460</b>	<b>900</b>

**Semester IV**

Semester IV Courses				Teaching Scheme			Continuous Evaluation in terms of Marks					
Sr. No.	Category	Course Code	Course Name	TH	T	PR	Credits	ISE I	ISE II	ISE III	ESE	Total
1	ESC	EEES2020	Electromagnetic Field	3	-	-	3	15	15	10	60	100
2	ESC	EEES2021	Numerical Computational Techniques	2	-	-	2	15	15	20	-	50
3	PC-V	EEPC2022	Electrical Machines -II	3	-	-	3	15	15	10	60	100
4	PC-VI	EEPC2023	Power System - I	3	-	-	3	15	15	10	60	100
5	ESC	EEES2024	Renewable Energy Systems	3	-	-	3	15	15	10	60	100
6	PC-V	EEPC2025	Lab Electrical Machines -II	-	-	2	1	25	-	-	25	50
7	ESC	EEES2026	Lab Numerical Computational Techniques	-	-	2	1	25	-	-	25	50
8	OE- II			3	-	-	3	15	15	10	60	100
<b>Total</b>				<b>17</b>	<b>0</b>	<b>04</b>	<b>19</b>	<b>140</b>	<b>90</b>	<b>70</b>	<b>350</b>	<b>650</b>

# Industrial Training of minimum 4 weeks after second/third year, for which one credit is awarded in VII semester.  
\*ISE I, II will be compulsory class tests and ISE III will be based on any one of the following components: surprise test, declared test, MCQ test, assignments, PPT presentation, quiz, fabrication of a working model, etc. However, the course coordinator shall declare the method of evaluation at the beginning of the course.

Approved in XXIV<sup>th</sup> Academic Council, Dated 23/07/2022

Teaching and Evaluation Scheme from year 2023-24  
Third Year B. Tech. Program in Electrical Engineering  
**Semester V**

Semester V Course				Teaching Scheme			Continuous Evaluation in terms of Marks					
Sr No	Category	Course Code	Course Name	TH	T	PR	Credits	ISE I	ISE II	ISE III	ESE	Total
1	PC-VII	EEPC3001	Control Systems- I	3	-	-	3	15	15	10	60	100
2	PC-VIII	EEPC3002	Digital Circuits	3	-	-	3	15	15	10	60	100
3	PC- IX	EEPC3003	Power System- II	3	-	-	3	15	15	10	60	100
4	PE- I			3	-	-	3	15	15	10	60	100
5	HSMC-II			3	-	-	3	15	15	10	60	100
6	OE-III			3	-	-	3	15	15	10	60	100
7	PC-VII	EEPC3004	Lab Control Systems -I	-	-	2	1	25	-	-	25	50
8	PC-VIII	EEPC3005	Lab Digital Circuits	-	-	2	1	25	-	-	25	50
9	PC- IX	EEPC3006	Lab Power System- II	-	-	2	1	25	-	-	25	50
<b>Total</b>				<b>18</b>	<b>-</b>	<b>06</b>	<b>21</b>	<b>165</b>	<b>90</b>	<b>60</b>	<b>335</b>	<b>750</b>

**Semester VI**

Semester VI Course				Teaching Scheme			Continuous Evaluation in terms of Marks					
Sr No	Category	Course Code	Course Name	TH	T	PR	Credits	ISE I	ISE II	ISE III	ESE	Total
1	PC-X	EEPC3020	Microcontroller & Applications	3	-	-	3	15	15	10	60	100
2	PC-XI	EEPC3021	Control Systems -II	3	-	-	3	15	15	10	60	100
3	PC XII	EEPC3022	Power Electronics	3	-	-	3	15	15	10	60	100
4	OE-IV			3	-	-	3	15	15	10	60	100
5	HSMC-III			3	-	-	3	15	15	10	60	100
6	ESC	EEES3023	Artificial Intelligence & Machine Learning	3	-	-	3	15	15	10	60	100
7	PE- II (Lab)			-	-	2	1	25	-	-	25	50
8	PC-X	EEPC3024	Lab Microcontroller & Applications	-	-	2	1	25	-	-	25	50
9	PC XII	EEPC3025	Lab Power Electronics	-	-	2	1	25	-	-	25	50
10	ESC	EEES3026	Lab Artificial Intelligence & Machine Learning	-	-	2	1	25	-	-	25	50
<b>Total</b>				<b>18</b>	<b>-</b>	<b>08</b>	<b>22</b>	<b>190</b>	<b>90</b>	<b>60</b>	<b>460</b>	<b>800</b>

# Industrial Training of minimum 4 weeks after second/third year, for one credit is awarded in VII semester. \*ISE I, II will be a compulsory test. ISE III will be based on any one of the following components: - Surprise Test, Declared Test, MCQ Test, Assignments, PPT presentation, Quiz, Fabrication of working model, etc. However, the course coordinator shall declare the method of evaluation at the beginning of the course.

*SP4*  
Approved in XIV<sup>th</sup> Academic  
Council, Dated 23/07/2022

Teaching and Evaluation Scheme from year 2024-25  
Final Year B. Tech. Program in Electrical Engineering  
Semester VII

Semester VII Course				Teaching scheme			Continuous Evaluation in terms of Marks					
Sr No	Category	Course Code	Course Name	TH	T	PR	Credits	ISE I	ISE II	ISE III	ESE	Total
1	PC XIII	EEPC4001	Electric Drives	3	-	-	3	15	15	10	60	100
2	PC XIV	EEPC4002	Power System Protection	3	-	-	3	15	15	10	60	100
3	PC XV	EEPC4003	Digital Signal Processing	3	-	-	3	15	15	10	60	100
4	PE-III			3	-	-	3	15	15	10	60	100
5	OE-V			3	-	-	3	15	15	10	60	100
6	PC XVI	EEPC4004	Lab Electric Drives	-	-	2	1	25	-	-	25	50
7	PC XIV	EEPC4005	Lab Power System Protection	-	-	2	1	25	-	-	25	50
8	Project Phase I	EEPC4006		-	-	8	4	50	-	-	50	100
9		EEPC4007	Industrial Training	-	-	-	1	-	-	-	-	-
10	\$ABPDC		Activity- 1	-	-	-	AC	-	-	-	-	-
	\$ABPDC		Activity- 2	-	-	-	AC	-	-	-	-	-
<b>Total</b>				<b>15</b>	<b>-</b>	<b>12</b>	<b>20</b>	<b>175</b>	<b>75</b>	<b>50</b>	<b>400</b>	<b>700</b>

\$ Activity based activities personality development courses are to be performed from 3rd semester to 7th semester.

**Semester VIII**

(One semester long internship in industry/Research Organisation students\*\*)

Semester VIII Course				Teaching Scheme			Continuous Evaluation in terms of Marks					
Sr No	Category	Course Code	Course Name	TH	T	PR	Credits	ISE I	ISE II	ISE III	ESE	Total
1	PE-IV*			3	-	-	3	15	15	10	60	100
2	PE-V**			3	-	-	3	15	15	10	60	100
3	HSMC-IV**			3	-	-	3	15	15	10	60	100
4	Project Phase II	EEPC4020		-	-	12	6	75	-	-	75	150
<b>Total</b>				<b>9</b>	<b>-</b>	<b>12</b>	<b>15</b>	<b>120</b>	<b>45</b>	<b>30</b>	<b>255</b>	<b>450</b>

\*\*To be completed online mode or allied courses from MOOCs by the students who wish to go for one semester long internship in Industry/Research Organization. However, normal track students will complete these courses in offline mode in college.

\*ISE I , ISE II will be compulsory Class Test and ISE III will be based on any one of the following components - Surprise Test, Declared Test, MCQ Test, Assignments, PPT presentation, Quiz, Fabrication of working model etc. However, the course coordinator shall declare a method of evaluation at the beginning of the course.

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### List of Professional Electives\*\*

Courses	1	2	3	4	5	6
<b>PE I</b> EEPE 3010-3015	Electrical Machine Design EEPE 3010	High Voltage Engineering EEPE 3011	Energy Storage System EEPE 3013	Utilization of Electrical Energy EEPE 3014	Optimization Techniques EEPE 3015	
<b>PE II</b> (LAB) EEPE3031-36	Lab Circuit Simulation EEPE3031	Lab Renewable Energy Technology EEPE3032	Lab High Voltage Engineering EEPE3033	Lab Electrical Estimation & Testing EEPE3034	Lab Internet of Things EEPE3035	Lab Energy Storage Systems EEPE3036
<b>PE III</b> EEPE4010-40 15	Application s of Embedded systems EEPE4010	Power Systems Dynamics & Control EEPE4011	HVDC & FACT EEPE4012	Reliability & Condition Monitoring EEPE4013	Smart Grid Technology EEPE4014	Computer Methods in Power Systems EEPE4015
<b>PE IV</b> EEPE4021-26	Power Quality & Its Mitigation EEPE4021	Restructured Power Systems EEPE4022	Energy Conservation & Management EEPE4023	EHVAC Transmission EEPE4024	Advanced Protective Relaying EEPE4025	Electrical power Distribution system EEPE4026
<b>PE V</b> EEPE4027-3 1	Application s of Power Electronics to Industry EEPE4027	Electrical Vehicle EEPE4028	Power Converters EEPE4029	Industrial Instrumentatio n and Automation EEPE4030	Illumination Engineering EEPE4031	

### List of Open Elective courses

Sr.No.	Course Code	Course Name	Pre-requisite	Eligible students from departments	Credits L-T-P	Offered Semester	Suggested by dept
1	EEOE0010	Energy and Environment	No	All branches	3-0-0	(III sem) Odd	Electrical Dept
2	EEOE1020	Renewable Energy Technology	No	All branches except Electrical	3-0-0	(IV sem) Even	Electrical Dept
3	EEOE0030	Engineering Optimization	No	All branches	3-0-0	(V sem) Odd	Electrical Dept
4	EEOE1040	Electric Vehicle	No	All branches except Electrical	3-0-0	(VI sem) Even	Electrical Dept
5	EEOE0050	Industrial Automation and Control		All branches	3-0-0	(VII sem) Odd	Electrical Dept

*SP4*  
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Council, Dated 23/07/2022

List of HSS Elective courses offered by Electrical Department

Sr.No.	Course Code	Course Name	Pre-requisite	Eligible students from departments	Credits L-T-P	Offered Semester	Suggested by dept
1	EEHS0010	Consumer Psychology	No	All branches except Electrical	3-0-0	V sem (Odd)	Electrical Dept
2	EEHS1020	Energy Economics and policy	No	All branches except Electrical	3-0-0	VI sem (Even)	Electrical Dept
3	EEHS1040	Macro economics	No	All branches	3-0-0	VIII sem (Even)	Electrical Dept

### Curriculum Comparison for GECA and AICTE

S. No.	Category	Suggested Breakup Credits(Total 160) by AICTE	Suggested by Department
1	Humanities and Social Sciences including Management courses	12	12
2	Basic Science courses	25	20
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	24	32
4	Professional core courses	48	57
5	Professional Elective courses relevant to the chosen specialization/branch	18	13
6	Open subjects – Electives from other technical and /oremerging subjects	18	15
7	Project work, seminar and internship in industry or elsewhere	15	11
8	Activity Based Learning	-	00
9	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Traditional Knowledge]	(non-credit)	
	Total	160	160

Chairperson/ HEED

*SP4*  
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