

**COURSE STRUCTURE- 2020 PATTERN**  
**SECOND YEAR B. TECH. ELECTRICAL ENGINEERING**

**SEMESTER-III**

Course			Teaching Scheme Hours/week				Evaluation Scheme-Marks						
Cat.	Code	Title	L	T	P	Credits	Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PCC	EE201	Material Science	3	-	-	3	30	50	20	-	-	-	100
BSC	BS202	Engineering Mathematics III	3	1	-	4	30	50	20	-	-	-	100
PCC	EE203	Electrical Measurements and Instrumentation	4	-	-	4	30	50	20	-	-	-	100
PCC	EE204	Analog and Digital Electronics	3	-	-	3	30	50	20	-	-	-	100
HSMC	HS205	Universal Human Values & Professional Ethics	3	-	-	3	30	50	20	-	-	-	100
HSMC	EE206	General Proficiency	-	-	2	1	-	-	-	-	-	50	50
LC	EE207	Material Science Laboratory	-	-	2	1	-	-	-	50	-	-	50
LC	EE208	Electrical Measurements and Instrumentation Laboratory	-	-	2	1	-	-	-	-	50	-	50
LC	EE209	Analog and Digital Electronics Laboratory	-	-	2	1	-	-	-	-	50	-	50
MC	MC210	Mandatory Course-III	2	-	-	Non Credit	-	-	-	-	-	-	Pass/Fail
<b>Total</b>			<b>18</b>	<b>1</b>	<b>8</b>	<b>21</b>	<b>150</b>	<b>250</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>50</b>	<b>700</b>
<b>MC210</b>	Mandatory Course-III		Constitution of India – Basic features and fundamental principles										

**List of Abbreviations**

Abbreviation	Full Form	Abbreviation	Full Form
BSC	Basic Science Course	MC	Mandatory Course
ESC	Engineering Science Course	PCC	Professional Core Course
HSMC	Humanities/Social Sciences/Management Course	PEC	Professional Elective Course
IP	Induction Program	OEC	Open Elective Course
L	Lecture	LC	Laboratory Course
T	Tutorial	CA	Continuous Assessment
P	Practical	OR	End Semester Oral Examination
ISE	In-Semester Evaluation	PR	End Semester Practical Examination
ESE	End-Semester Evaluation	TW	Continuous Term Work Evaluation
Cat	Category	PROJ	Project

**COURSE STRUCTURE- 2020 PATTERN**  
**SECOND YEAR B. TECH. ELECTRICAL ENGINEERING**

**SEMESTER-IV**

Course			Teaching Scheme Hours/week				Evaluation Scheme-Marks						
Cat.	Code	Title	L	T	P	Credits	Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PCC	EE211	Numerical Computations with Signals and Systems	3	1	-	4	30	50	20	-	-	-	100
PCC	EE212	Network Analysis	3	1	-	4	30	50	20	-	-	-	100
PCC	EE213	Electrical Machines I	4	-	-	4	30	50	20	-	-	-	100
PCC	EE214	Power System I	3	-	-	3	30	50	20	-	-	-	100
LC	EE215	Numerical Computations with Signals and Systems Laboratory	-	-	2	1	-	-	-	-	50	-	50
LC	EE216	Network Analysis Laboratory	-	-	2	1	-	-	-	-	50	-	50
LC	EE217	Electrical Machines I Laboratory	-	-	2	1	-	-	-	-	50	-	50
LC	EE218	Power System I Laboratory	-	-	2	1	-	-	-	50	-	-	50
PROJ	EE219	Seminar / Mini Project	-	-	2	1	-	-	-	-	-	50	50
PROJ	EE220	Professional Development	-	-	2	1	-	-	-	-	-	50	50
MC	MC221	Mandatory Course-IV	2	-	-	Non Credit	-	-	-	-	-	-	Pass/Fail
<b>Total</b>			<b>15</b>	<b>2</b>	<b>12</b>	<b>21</b>	<b>120</b>	<b>200</b>	<b>80</b>	<b>50</b>	<b>150</b>	<b>100</b>	<b>700</b>

<b>MC221</b>	Mandatory Course-IV	Innovation - Project based – Sc., Tech, Social, Design & Innovation
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Cat	Category	PROJ	Project

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**SEMESTER- V**

Course			Teaching Scheme Hours/week				Evaluation Scheme-Marks						
Cat.	Code	Title	L	T	P	Credits	Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PCC	EE301	Microcontrollers And Applications	3	-	-	3	30	50	20	-	-	-	100
PCC	EE302	Electrical Machines II	3	-	-	3	30	50	20	-	-	-	100
PCC	EE303	Power System II	3	-	-	3	30	50	20	-	-	-	100
PCC	EE304	Power Electronics	3	-	-	3	30	50	20	-	-	-	100
PEC	EE305	Professional Elective-I	3	-	-	3	30	50	20	-	-	-	100
LC	EE306	Microcontrollers And Applications Laboratory	-	-	2	1	-	-	-	25	-	-	25
LC	EE307	Electrical Machines II Laboratory	-	-	2	1	-	-	-	-	50	-	50
LC	EE308	Power System II Laboratory	-	-	2	1	-	-	-	25	-	-	25
LC	EE309	Power Electronics Laboratory	-	-	2	1	-	-	-	-	50	-	50
PRJ	EE310	Skill based Credit Course	1	-	-	1	-	-	-	-	-	50	50
MLC	MC311	Mandatory Learning Course-V A. Electrical Energy Conservation and Auditing	1	-	-	Non Credit	-	-	-	-	-	-	Pass/Fail
<b>Total</b>			<b>17</b>	<b>-</b>	<b>8</b>	<b>20</b>	<b>150</b>	<b>250</b>	<b>100</b>	<b>50</b>	<b>100</b>	<b>50</b>	<b>700</b>

EE305	Professional Elective-I	EE305A	Renewable Energy Sources
		EE305B	Smart Grid
MC311	Mandatory Learning Course-V	MC311A	Electrical Energy Conservation and Auditing

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**SEMESTER- VI**

Course			Teaching Scheme Hours/week				Evaluation Scheme-Marks						
Cat.	Code	Title	L	T	P	Credits	Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PCC	EE312	Power System Operation and Control	4	-	-	4	30	50	20	-	-	-	100
PCC	EE313	Feedback Control Systems	3	-	-	3	30	50	20	-	-	-	100
PCC	EE314	Electrical Machine Design	3	-	-	3	30	50	20	-	-	-	100
PEC	EE315	Professional Elective-II A. Electrical Drives B. Utilization of Electrical Energy C. Electromagnetic Fields	3	-	-	3	30	50	20	-	-	-	100
HSMC	HS315	Corporate Readiness	2	-	-	2	-	-	50	-	-	-	50
PROJ	PR316	IPR & EDP	2	-	-	2	-	30	20	-	-	-	50
LC	EE317	Power System Operation and Control Laboratory	-	-	2	1	-	-	-	25	-	-	25
LC	EE318	Feedback Control Systems Laboratory	-	-	2	1	-	-	-	-	50	-	50
LC	EE319	Electrical Machine Design Laboratory	-	-	2	1	-	-	-	25	-	-	25
LC	EE320	Programming Laboratory	-	-	2	1	-	-	-	-	50	-	50
PROJ	EE321	Creational Activity	-	-	2	1	-	-	-	-	-	50	50
MLC	EE322	Mandatory Learning Course-VI A. PCB Design	1	-	-	Non Credit	-	-	-	-	-	-	Pass/Fail
<b>Total</b>			<b>18</b>	<b>-</b>	<b>10</b>	<b>22</b>	<b>120</b>	<b>230</b>	<b>150</b>	<b>50</b>	<b>100</b>	<b>50</b>	<b>700</b>

**COURSE STRUCTURE- 2020 PATTERN**  
**FINAL YEAR B. TECH. ELECTRICAL ENGINEERING**

**SEMESTER- VII**

Course			Teaching Scheme Hours/week				Evaluation Scheme-Marks						
Cat.	Code	Title	L	T	P	Credits	Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PCC	EE401	Switch Gear and Protection	3	-	-	3	30	50	20	-	-	-	100
PCC	EE402	Control System Design	3	-	-	3	30	50	20	-	-	-	100
PCC	EE403	High Voltage Engineering	3	-	-	3	30	50	20	-	-	-	100
PEC	EE404	Professional Elective-III A. Electric and Hybrid Vehicle B. HVDC Transmission Systems C. Digital Signal Processing	4	-	-	4	30	50	20	-	-	-	100
PEC	EE405	Professional Elective-IV A. Power Quality B. Transmission and Distribution C. Intelligent Systems with AI and ML	3	-	-	3	30	50	20	-	-	-	100
LC	EE406	Switch Gear and Protection Laboratory	-	-	2	1	-	-	-	50	-	-	50
LC	EE407	Control System Design Laboratory	-	-	2	1	-	-	-	50	-	-	50
LC	EE408	High Voltage Engineering Laboratory	-	-	2	1	-	-	-	-	50	-	50
PROJ	EE409	Project Stage I	-	-	6	3	-	-	-	50	-	100	150
MLC	MC410	Mandatory Learning Course-VII A. Financially Smart	1	-	-	Non Credit	-	-	-	-	-	-	Pass/Fail
		<b>Total</b>	<b>17</b>	<b>-</b>	<b>12</b>	<b>22</b>	<b>150</b>	<b>250</b>	<b>100</b>	<b>150</b>	<b>50</b>	<b>100</b>	<b>800</b>

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**SEMESTER- VIII**

Course			Teaching Scheme Hours/week				Evaluation Scheme-Marks					
Cat.	Code	Title	L	T	P	Credits	Theory		OR	PR	TW	Total
							ISE	ESE				
OEC	EE411	Open Elective I (NPTEL) A. Sensors and Actuators B. Circuit Analysis for Analog Designers C. Industrial Automation and Control D. Problem Solving Through Programming in C E. Sustainable Power Generation Systems F. Electromagnetic Theory	3	-	-	3	50	50	-	-	-	100
OEC	EE412	Open Elective-II (NPTEL) A. Fundamentals of Semiconductor Devices B. Computer-Aided Design of Electrical Machines C. Introduction To Industry 4.0 And Industrial Internet of Things D. Embedded Sensing, Actuation and Interfacing Systems E. Fuzzy Sets, Logic and Systems & Applications F. Design Of Photovoltaic Systems	3	-	-	3	50	50	-	-	-	100
OEC	EE413	Open Elective III (NPTEL) A. EV - Vehicle Dynamics and Electric Motor Drives B. FACTs Devices C. Power Quality Improvement Technique D. Data Science for Engineers E. Discrete Time Signal Processing F. Electrical Distribution System Analysis	2	-	-	2	50	50	-	-	-	100
PROJ	EE414	Project Stage-II	-	-	4	2	-	-	50	-	100	150
PROJ	EE415	Internship	-	-	12	6	-	-	50	-	-	50
		<b>Total</b>	<b>9</b>	<b>-</b>	<b>16</b>	<b>16</b>	<b>150</b>	<b>150</b>	<b>100</b>	<b>-</b>	<b>100</b>	<b>500</b>