

**STUDY & EVALUATION SCHEME**  
**B.TECH: ELECTRICAL ENGINEERING**  
**SPECIALIZATION: ELECTRIC VEHICLE ENGINEERING**  
**I YEAR: I SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	HOURS PER WEEK			CREDITS
			L	T	P	
1	-----/ BCY1701	Physics/ Chemistry	3	1	3	5.5
	BPH1701-CS	Physics (for CS)				
	BPH1701-EC	Physics (for EC)				
	BPH1701-EE	Physics (for EE)				
	BPH1701-CE	Physics (for CE)				
	BPH1701-ME	Physics (for ME)				
2	BMA1001-CS	Mathematics-I (for CS)	3	1	0	4
	BMA1001-EC	Mathematics-I (for EC)				
	BMA1001-EE	Mathematics-I (for EE)				
	BMA1001-CE	Mathematics-I (for CE)				
	BMA1001-ME	Mathematics-I (for ME)				
3	BEE1701/ BCS1701	Basic Electrical Engineering/ Programming for Problem Solving	3	1	2	5
4	BME1701/ BME1701	Engineering Graphics and Design/ Workshop Practices	1	0	4	3
5	XESX601/ BHU1701	Environment Science* / English	2/2	0/0	0/2	0/3
<b>TOTAL</b>			<b>12/12</b>	<b>3/3</b>	<b>9/11</b>	<b>17.5/20.5</b>

- \* -Mandatory Non-Credit Course
- L -Lecture
- T -Tutorial
- P -Practical
- C -Credit

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**I YEAR: II SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	HOURS PER WEEK			CREDITS
			L	T	P	
1	BCY2701/ -----	Chemistry/Physics	3	1	3	5.5
	BPH2701-CS	Physics (for CS)				
	BPH2701-EC	Physics (for EC)				
	BPH2701-EE	Physics (for EE)				
	BPH2701-CE	Physics (for CE)				
	BPH2701-ME	Physics (for ME)				
2	BMA2001-CS	Mathematics-II (for CS)	3	1	0	4
	BMA2001-EC	Mathematics-II (for EC)				
	BMA2001-EE	Mathematics-II (for EE)				
	BMA2001-CE	Mathematics-II (for CE)				
	BMA2001-ME	Mathematics-II (for ME)				
3	BEE2701/ BCS2701	Programming for Problem Solving/ Basic Electrical Engineering	3	1	2	5
4	BME2701/ BME2701	Workshop Practices / Engineering Graphics and Design	1	0	4	3
5	BHU2701/ XESX601	English/ Environment Science*	2/2	0/0	2/0	3/0
<b>TOTAL</b>			<b>12/12</b>	<b>3/3</b>	<b>11/9</b>	<b>20.5/17.5</b>

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**II YEAR: III SEMESTER**

<b>S. NO.</b>	<b>SUBJECT CODE</b>	<b>SUBJECT</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>CIE</b>	<b>ESE</b>	<b>TOTAL</b>	<b>C</b>
1	BEE3005	Electrical Circuit Analysis	3	1	0	40	60	100	4
2	BEE3502	Networks Lab	0	0	2	80	20	100	1
3	BEE3006	Electrical Machines-I	3	0	0	40	60	100	3
4	BEE3504	Electrical Machines-I Lab	0	0	2	80	20	100	1
5	BEE3007	Engineering Material	3	0	0	40	60	100	3
6	BMA3010-EE	Mathematics-III	3	1	0	40	60	100	4
7	-	Open Elective-I	3	0	0	40	60	100	3
<b>TOTAL</b>			<b>15</b>	<b>02</b>	<b>04</b>	<b>360</b>	<b>340</b>	<b>700</b>	<b>19</b>
8	BEE3009	Fundamentals of EV & HEV	3	0	0	40	60	100	2
9	BEE3505	EV Fundamental Lab	0	0	2	20	80	100	1

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**II YEAR: IV SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BEE4005	Electrical Machines-II	3	0	0	40	60	100	3
2	BEE4505	Electrical Machines-II Lab	0	0	2	80	20	100	1
3	BEE4006	Signal and System	2	1	0	40	60	100	3
4	BEE4007	Analog and Digital Electronics	3	1	0	40	60	100	4
5	BEE4506	Electronics Lab	0	0	2	80	20	100	1
6	BEE4008	Electromagnetic Fields	3	1	0	40	60	100	4
7	BME4005	Engineering Mechanics	3	1	0	40	60	100	4
8	BBT4023	Biology	2	0	0	40	60	100	2
9	BSS4001	Soft Skills and Inter Traditional Knowledge	2	0	0	100	00	100	2
10	XHUX602	Essence of Indian Traditional Knowledge	2	0	0	Satisfactory/ Unsatisfactory			0
<b>TOTAL (IV SEM)</b>			<b>20</b>	<b>04</b>	<b>04</b>	<b>500</b>	<b>400</b>	<b>900</b>	<b>24</b>
11	BEE4012	Powertrain & Modes	3	0	0	40	60	100	2
12	BEE4509	EV Powertrain Lab	0	0	2	20	80	100	1

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**III YEAR: V SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BEE5009	Power System I	3	1	0	40	60	100	4
2	BEE5506	Power System I Lab	0	0	2	80	20	100	1
3	BEE5010	Control System	3	0	0	40	60	100	3
4	BEE5502	Control Lab	0	0	2	80	20	100	1
5	BEE5006	Micro- Processor and Micro- Controller	3	0	0	40	60	100	3
6	BEE5505	Micro- Processor Lab	0	0	2	80	20	100	1
7	BEE5011	EMMI	3	0	0	40	60	100	3
8	---	Open Elective-II	3	0	0	40	60	100	3
9	---	Open Elective-III	3	0	0	40	60	100	3
10	BAP5501	Aptitude and Reasoning and Online Test	0	0	2	100	-	100	0
11	XLAX601	Constitution of India	2	0	0	Satisfactory/ Unsatisfactory			0
<b>TOTAL</b>			<b>20</b>	<b>01</b>	<b>08</b>	<b>580</b>	<b>420</b>	<b>1000</b>	<b>22</b>
12	BEE5014	Battery, BMS & BTMS	3	0	0	40	60	100	3
13	BEE5508	Battery, BMS & BTMS Lab	0	0	2	20	80	100	1

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**III YEAR: VI SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BEE6006	Power System II	3	1	0	40	60	100	4
2	BEE6507	Power System II Lab	0	0	2	80	20	100	1
3	BEE6007	Power System Operation and Control	3	0	0	40	60	100	3
4	BEE6008	Measurement and Instrumentation	3	0	0	40	60	100	3
5	BEE6508	Measurement and Instrumentation Lab	0	0	2	80	20	100	1
6	BEE6001	Power Electronics	3	1	0	40	60	100	4
7	BEE6501	Power Electronics Lab	0	0	2	80	20	100	1
8	---	Department Elective-I	3	0	0	40	60	100	3
9	---	Open Elective-IV	3	0	0	40	60	100	3
10	BEE6502	Seminar	0	0	2	100	-	100	1
11	XEEX601	Industrial Visit	0	0	0	Satisfactory / Unsatisfactory			0
12	BAP6501	Aptitude and Reasoning and Online Test	0	0	2	100	-	100	0
<b>TOTAL</b>			<b>18</b>	<b>02</b>	<b>10</b>	<b>680</b>	<b>420</b>	<b>1100</b>	<b>24</b>
13	BEE6011	EV Charging Infra	3	0	0	40	60	100	3
14	BEE6510	EV Charging Infra Lab	0	0	2	20	80	100	1

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**IV YEAR: VII SEMESTER**

<b>S. NO.</b>	<b>SUBJECT CODE</b>	<b>SUBJECT</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>CIE</b>	<b>ESE</b>	<b>TOTAL</b>	<b>C</b>
1	BEE7002	Switch Gear and Protection	3	0	0	40	60	100	3
2	--	Department Elective II	3	0	0	40	60	100	3
3	---	Department Elective III	3	0	0	40	60	100	3
4	---	Open Elective - V	3	0	0	40	60	100	3
5	BEE7508	Project Stage - I	0	0	6	100	00	100	3
6	BEE4503	Summer Training (During Summer Vacation)	0	0	2	100	00	100	1
<b>TOTAL</b>			<b>12</b>	<b>00</b>	<b>08</b>	<b>360</b>	<b>240</b>	<b>600</b>	<b>16</b>
7	BEE7007	Intelligent Transport System	3	0	0	40	60	100	3
8	BEE7008	Automotive Diagnosis	3	0	0	40	60	100	3

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**IV YEAR: VIII SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	---	Department Elective IV	3	0	0	40	60	100	3
2	---	Department Elective V	3	0	0	40	60	100	3
3	---	Open Elective ---VI	3	0	0	40	60	100	3
4	----	Live Project/Internship Based on their area of Expertise/ Project stage II	0	0	16	80	20	100	6
<b>TOTAL</b>			<b>09</b>	<b>00</b>	<b>16</b>	<b>200</b>	<b>200</b>	<b>400</b>	<b>15</b>

<b>TOTAL (III SEM – VIII SEM)</b>	<b>112</b>	<b>09</b>	<b>58</b>	<b>3000</b>	<b>2700</b>	<b>5700</b>	<b>140</b>
<b>GRAND TOTAL (INCLUDING 1ST YEAR)</b>	<b>136</b>	<b>15</b>	<b>78</b>				<b>178</b>

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**LIST OF ELECTIVES**

**Open Elective List**

S. NO.	SUBJECT CODE	SUBJECT NAME	DEPARTMENT TO OFFER	SEMESTER	O.E
1	BHU3301	Organizational Psychology	HU	III	OR-I
	BHU3302	Organization Sociology			
2	BEC5301	Electronics Engineering	EC	V	OE-II
	BMA5301	Operational Research	MA		
	BCS5301	Computer Network	CS		
3	BMG5301	Economics	Management	V	OE-III
	BMG5302	Principal of Management			
4	BEC6301	Electronic Devices	EC	VI	OE-IV
	BME6301	Project Management	ME		
	BCS6301	Web Technologies	CS		
5	BEC7303	Analog and Digital communication	EC	VII	OE-V
	BME7304	Total Quality Management	ME		
	BCS7303	Database System	CS		
6	BEC8304	Mobile Communication and Network	EC	VIII	OE-VI
	BME8304	Thermal and Fluid Engineering	ME		
	BCS8303	Enterprise Resource Planning	CS		

## List of Department Electives

<b>S. NO.</b>	<b>SUBJECT CODE</b>	<b>SUBJECT NAME</b>	<b>DEPARTMENT TO OFFER</b>	<b>SEMESTER</b>	<b>O.E</b>
1	BEE6104	Smart Grid	EE	VI	D.E.-I
	BEE6105	Electrical Drives			
	BEE6105	High Voltage Engineering			
2	BEE7105	Line Commutated and Active Rectifiers	EE	VII	D.E.-II
	BEE7106	Electrical and Hybrid Vehicles			
	BEE7107	Electrical Machine Design			
3	BEE7201	Advanced Control System	EE	VII	D.E.-III
	BEE7202	Power Generation System			
	BEE7203	Power Electronics Applications to Power Systems			
4	BEE8103	HVDC Transmission Systems	EE	VIII	D.E.-IV
	BEE8104	Power Quality and FACTS			
	BEE8105	Industrial Electrical Systems			
5	BEE8204	Distributed Generation and Micro Grid	EE	VIII	D.E.-V
	BEE8205	Energy Efficiency and Conservation			
	BEE8206	MOOC: Computer Aided Power System Analysis			

## **SUMMARY SHEET**

<b>Semester</b>	<b>Compulsory Subject Credits</b>	<b>Specialization Subject Credits</b>	<b>Remark</b>
<b>I.</b>	17.5	----	
<b>II.</b>	20.5	----	
<b>III.</b>	19		
<b>IV.</b>	24	6	
<b>V.</b>	22		
<b>VI.</b>	24	8	
<b>VII.</b>	16		
<b>VIII.</b>	15	6	
<b>TOTAL</b>	<b>158</b>	<b>20</b>	
<b>Grand Total</b>	<b>178</b>		