

# **Mohan Lal Sukhadia University Udaipur**



## **B. Tech. Program (Effective from session 2021-2022)**

Electrical Engineering

Semesters III - VIII

**Course structure**

**Teaching & Examination Scheme  
Semester III**

<b>THEORY</b>											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	BT3EE01-CT01	Advance Engineering Mathematics-I	3	0	0	3	30	120	<b>150</b>	<b>3</b>
2	HSMC	BT3EE02-CT02	Technical Communication	2	0	0	2	20	80	<b>100</b>	<b>2</b>
3	ESC	BT3EE03-CT03	Power generation Process	2	0	0	2	20	80	<b>100</b>	<b>2</b>
4	PCC	BT3EE04-CT04	Electrical Circuit Analysis	3	0	0	3	30	120	<b>150</b>	<b>3</b>
5		BT3EE05-CT05	Analog Electronics	3	0	0	3	30	120	<b>150</b>	<b>3</b>
6		BT3EE06-CT06	Electrical Machine - I	3	0	0	3	30	120	<b>150</b>	<b>3</b>
7		BT3EE07-CT07	Electromagnetic Field	2	0	0	2	20	80	<b>100</b>	<b>2</b>
			<b>Sub Total</b>	18	0	0		180	720	<b>900</b>	<b>18</b>
<b>PRACTICAL &amp; SESSIONAL</b>											
8	PCC	BT3EE08-CP01	Analog Electronics Lab	0	0	2		20	30	<b>50</b>	<b>1</b>
9		BT3EE09-CP02	Electrical Machine-I Lab	0	0	4		40	60	<b>100</b>	<b>2</b>
10		BT3EE10-CP03	Electrical circuit design Lab	0	0	4		40	60	<b>100</b>	<b>2</b>
11	PEC	BT3EE11-CP04	Electrical Estimation and Costing	0	0	2		20	30	<b>50</b>	<b>1</b>
12	PSIT	BT3EE12-CP05	Industrial Training	0	0	2				<b>50</b>	<b>1</b>
			<b>Sub- Total</b>	0	0	14		120	180	<b>350</b>	<b>7</b>
			<b>TOTAL OF III SEMESTER</b>	18	0	14		300	900	1250	<b>25</b>

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**Teaching & Examination Scheme  
Semester IV**

<b>THEORY</b>											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	BSC	BT4EE01-CT01	Advance Engineering Mathematics-II	2	0	0	2	20	80	<b>100</b>	<b>2</b>
2	HSMC	BT4EE02-CT02	Managerial Economics and Financial Accounting	2	0	0	2	20	80	<b>100</b>	<b>2</b>
3	ESC	BT4EE03-CT03	Electrical Measurement & Instrumentation	3	0	0	3	30	120	<b>150</b>	<b>3</b>
4	PCC	BT4EE04-CT04	Electrical Machine - II	3	0	0	3	30	120	<b>150</b>	<b>3</b>
5		BT4EE05-CT05	Power Electronics	3	0	0	3	30	120	<b>150</b>	<b>3</b>
6		BT4EE06-CT06	Electrical Engineering Materials	3	0	0	3	30	120	<b>150</b>	<b>3</b>
7		BT4EE07-CT07	Digital Electronics	2	0	0	2	20	80	<b>100</b>	<b>2</b>
<b>Sub Total</b>				18	0	0		180	720	<b>900</b>	<b>18</b>
<b>PRACTICAL &amp; SESSIONAL</b>											
8	PCC	BT4EE08-CP01	Electrical Machine - II Lab	0	0	4		40	60	<b>100</b>	<b>2</b>
9		BT4EE09-CP02	Power Electronics Lab	0	0	4		40	60	<b>100</b>	<b>2</b>
10		BT4EE10-CP03	Digital Electronics Lab	0	0	2		20	30	<b>50</b>	<b>1</b>
11		BT4EE11-CP04	Measurement Lab	0	0	2		20	30	<b>50</b>	<b>1</b>
<b>Sub- Total</b>				0	0	12		120	180	<b>300</b>	<b>6</b>
<b>TOTAL OF IV SEMEESTER</b>				18	0	12		300	900	<b>1200</b>	<b>24</b>

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**Teaching & Examination Scheme  
Semester V**

**THEORY**

SN	Category	Course		Contact hrs/week			Marks				Cr	
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total		
1	ESC	BT5EE01-CT01	Electrical Materials	2	0	0	2	20	80	100	2	
2	PCC/ PEC	BT5EE02-CT02	Power System - I	3	0	0	3	30	120	150	3	
3		BT5EE03-CT03	Control System	3	0	0	3	30	120	150	3	
4		BT5EE04-CT04	Microprocessor	3	0	0	3	30	120	150	3	
5		BT5EE05-CT05	Electrical Machine Design	3	0	0	3	30	120	150	3	
6		Professional Elective I (any one)		2	0	0	2	20	80	100	2	
		BT5EE06-CT6A	Restructured Power									
		BT5EE06-CT6B	Electromagnetic Wave.									
	BT5EE06-CT6C	Digital Control System.										
		<b>Sub Total</b>		<b>16</b>	<b>0</b>	<b>0</b>		<b>160</b>	<b>640</b>	<b>800</b>	<b>16</b>	
<b>PRACTICAL &amp; SESSIONAL</b>												
7	PCC	BT5EE07-CP01	Power System - I Lab	0	0	2		20	30	50	1	
8		BT5EE07-CP02	Control System Lab	0	0	4		40	60	100	2	
9		BT5EE07-CP03	Microprocessor Lab	0	0	2		20	30	50	1	
10		BT5EE07-CP04	System Programming Lab	0	0	2		20	30	50	1	
11	PSIT	BT5EE07-CP05	Industrial Training	0	0	1		60	90	150	3	
		<b>Sub- Total</b>		<b>0</b>	<b>0</b>	<b>11</b>		160	240	400	8	
		<b>TOTAL OF V SEMESTER</b>		<b>16</b>	<b>0</b>	<b>9</b>		<b>320</b>	<b>880</b>	<b>1200</b>	<b>24</b>	

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**Teaching & Examination Scheme  
Semester VI**

<b>THEORY</b>											
SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
1	ESC	BT6EE01-CT01	Computer Architecture	2	0	0	2	20	80	100	2
2	PCC/ PEC	BT6EE02-CT02	Power System - II	3	0	0	3	30	120	150	3
3		BT6EE03-CT03	Power System Protection	3	0	0	3	30	120	150	3
4		BT6EE04-CT04	Electrical Energy Conversion and Auditing	3	0	0	3	30	120	150	3
5		BT6EE05-CT05	Electric Drives	3	0	0	3	30	120	150	3
6		Professional Elective II (any one)		3	0	0	3	30	120	150	3
		BT6EE06-CT6A	Power System Planning.								
		BT6EE06-CT6B	Digital Signal Processing.								
		BT6EE06-CT6C	Electrical and Hybrid Vehicles.								
		<b>Sub Total</b>		<b>17</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>170</b>	<b>680</b>	<b>850</b>	<b>17</b>
<b>PRACTICAL &amp; SESSIONAL</b>											
7	PCC	BT6EE07-CP01	Power System - II Lab	0	0	4	3	40	60	100	2
8		BT6EE08-CP02	Electric Drives Lab	0	0	4	3	40	60	100	2
9		BT6EE09-CP03	Power System Protection Lab	0	0	4	3	40	60	100	2
10		BT6EE10-CP04	Modelling and simulation lab	0	0	4	3	40	60	100	2
		<b>Sub- Total</b>		<b>0</b>	<b>0</b>	<b>16</b>		<b>160</b>	<b>240</b>	<b>400</b>	<b>8</b>
		<b>TOTAL OF VI SEMESTER</b>		<b>17</b>	<b>0</b>	<b>16</b>		<b>330</b>	<b>920</b>	<b>1250</b>	<b>25</b>

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**Teaching & Examination Scheme  
Semester VII**

SN	Course Type	Course		Hours per Week			Marks			Cr	
		Code	Name	L	T	P	Exm Hrs	IA	ETE		Total
1	PEC	BT7EE01-CT1A	Wind and Solar Energy Systems.	3	0	0	3	30	120	150	3
2		BT7EE01-CT1B	Power Quality and FACTS								
3		BT7EE01-CT1C	Control System Design.								
4	OE-I	BT7EE02-CE	Open Elective-I	3	0	0	3	30	120	150	3
<b>SUB TOTAL</b>				<b>6</b>	<b>0</b>	<b>0</b>		<b>60</b>	<b>240</b>	<b>300</b>	<b>6</b>
<b>PRACTICAL &amp; SESSIONAL</b>											
5	PCC	BT7EE03-CP01	Embedded Systems Lab	0	0	4	2	40	60	100	2
6	PCC	BT7EE04-CP02	Advance control system lab	0	0	4	2	40	60	100	2
7	PSIT	BT7EE05-CP03	Industrial Training	1	0	0		60	90	150	3
8		BT7EE06-CP04	Seminar	2	0	0		40	60	100	2
<b>SUB TOTAL</b>				<b>3</b>	<b>0</b>	<b>8</b>		<b>180</b>	<b>270</b>	<b>450</b>	<b>9</b>
<b>TOTAL OF VII SEMESTER</b>				<b>9</b>	<b>0</b>	<b>8</b>		<b>240</b>	<b>510</b>	<b>750</b>	<b>15</b>

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**Teaching & Examination Scheme  
Semester VIII**

<b>THEORY</b>											
SN	Course Type	Course		Hours per Week			Marks			Cr	
		Course Code	Course Name	L	T	P	Exm Hrs	IA	ETE		Total
1	PEC	BT8EE01-CT1A	HVDC Transmission Sys- tem.	3	0	0	3	30	120	150	3
2		BT8EE01-CT1B	Line Commutated and active rectifiers.								
3		BT8EE01-CT1C	Advanced Electric Drives.								
4	OE	BT8EE02-CE	Open Elective-II	3	0	0	3	30	120	150	3
				<b>6</b>	<b>0</b>	<b>0</b>		<b>60</b>	<b>240</b>	<b>300</b>	<b>6</b>
<b>PRACTICAL &amp; SESSIONAL</b>											
5	PCC	BT8EE03-CP01	Energy Systems Lab	0	0	4	3	40	60	100	2
6	PSIT	BT8EE04-CP02	Project	3	0	0		140	210	350	7
			<b>SUB TOTAL</b>	<b>3</b>	<b>0</b>	<b>4</b>		<b>180</b>	<b>270</b>	<b>450</b>	<b>9</b>
			<b>TOTAL OF VIII SEMESTER</b>	<b>9</b>	<b>0</b>	<b>4</b>		<b>240</b>	<b>510</b>	<b>750</b>	<b>15</b>

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## List of Open Electives

### Elective-I

BT7EE02-CE01	Human Engineering and Safety
BT7EE02-CE02	Environmental Engineering and Disaster Management
BT7EE02-CE03	Aircraft Avionic System
BT7EE02-CE04	Non-Destructive Testing
BT7EE02-CE05	Optimization Techniques
BT7EE02-CE06	Sustainable Engineering
BT7EE02-CE07	Introduction to Ceramic Science & Technology
BT7EE02-CE08	Plant, Equipment and Furnace Design
BT7EE02-CE06	Environmental Impact Analysis
BT7EE02-CE07	Disaster Management
BT7EE02-CE09	Electrical Machines and Drives
BT7EE02-CE10	Power Generation Sources.
BT7EE02-CE11	Principle of Electronic communication
BT7EE02-CE12	Micro and Smart System Technology
BT7EE02-CE13	Finite Element Analysis
BT7EE02-CE14	Quality Management
BT7EE02-CE15	Rock Engineering
BT7EE02-CE16	Mineral Processing
BT7EE02-CE17	Pipeline Engineering
BT7EE02-CE18	Water Pollution control Engineering
BT7EE02-CE19	Technical Textiles
BT7EE02-CE20	Garment Manufacturing Technology
BT7EE02-CE21	Human Engineering and Safety
BT7EE02-CE22	Environmental Engineering and Disaster Management



### Elective-II

BT8EE02-CE01	Energy Management
BT8EE02-CE02	Waste and By-product Utilization
BT8EE02-CE03	Finite Element Methods
BT8EE02-CE04	Factor of Human Interactions
BT8EE02-CE05	Refinery Engineering Design
BT8EE02-CE06	Fertilizer Technology
BT8EE02-CE07	Electrical and Electronic Ceramics
BT8EE02-CE08	Biomaterials
BT8EE02-CE09	Composite Materials
BT8EE02-CE10	Fire and Safety Engineering
BT8EE02-CE11	Energy Audit and Demand side Management
BT8EE02-CE12	Soft Computing
BT8EE02-CE13	Industrial and Biomedical applications of RF Energy
BT8EE02-CE14	Robotics and control
BT8EE02-CE15	Operations Research
BT8EE02-CE16	Simulation Modeling and Analysis
BT8EE02-CE17	Experimental Stress Analysis
BT8EE02-CE18	Maintenance Management
BT8EE02-CE19	Unconventional Hydrocarbon Resources
BT8EE02-CE20	Energy Management & Policy
BT8EE02-CE21	Material and Human Resource Management
BT8EE02-CE22	Disaster Management