

**Gautam Buddha University**  
**School of Engineering**  
**Department of Electrical Engineering**  
**Course structure of 2 Year M. Tech. Programme in Power Systems (2020-22)**

<b>SEMESTER-I</b>					<b>Course Type</b>
<b>S. No.</b>	<b>Subject Code</b>	<b>Courses</b>	<b>L-T-P</b>	<b>Credit</b>	
<b>THEORY</b>					
1.	MA406/ MA507/ MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-P1
2.	EE571	Power System Analysis and Control	3-0-0	3	C-P1
3.	EE573	Power System Transients	3-0-0	3	C-P2
4.	EE575	Renewable Energy Sources	3-0-0	3	C-P3
5.		Elective-I	3-0-0	3	EDSE-P1
6.		Open Elective	3-0-0	3	OE-P1
<b>PRACTICALS/PROJECT</b>					
7.	EE591	Power System Lab	0-0-3	2	C-P4
8.	EE597	Seminar	0-0-3	2	SEC1
9.	GP	General Proficiency	-	NC	
		<b>Total</b>		<b>23</b>	
Total Contact Hours				<b>25</b>	

**Open Elective:** Course offered from other school

<b>SEMESTER-II</b>					<b>Course Type</b>
<b>S. No.</b>	<b>Subject Code</b>	<b>Courses</b>	<b>L-T-P</b>	<b>Credit</b>	
<b>THEORY</b>					
1.	MA406/MA507 /MA402	Operation Research/Optimization Techniques/Modelling & Simulation	3-1-0	4	EGE-P2
2.	EE572	Advance Power System Protection	3-0-0	3	C-P5
3.	EE574	Power System Planning and Reliability	3-0-0	3	C-P6
4.	EE576	Power System Design	3-0-0	3	C-P7
5.		Specialized Elective- I	3-0-0	3	EDSE-P2
6.		<b>PRACTICALS/PROJECT</b>			
	EE598	Project	0-0-10	5	EDP-P1
7.	EE588	Power System Simulation Lab	0-0-3	2	C-P8
8.	GP	General Proficiency	-	NC	
		<b>Total</b>		<b>23</b>	
Total Contact Hours				<b>29</b>	

SEMESTER-III					Course Type
S. No.	Subject Code	Courses	L-T-P	Credit	
		<b>THEORY</b>			
1.	EE671	Power System Dynamics & Control	3-0-0	3	C-P9
2.	EE673	HVDC and FACTS	3-1-0	4	C-P10
3.		Specialized Elective-II	3-0-0	3	EDSE-P3
4.		Specialized Elective-III	3-0-0	3	EDSE-P4
5.		<b>PRACTICALS/PROJECT</b>			
6.	EE697	Distribution Network Lab	0-0-2	1	CP11
7.	EE699	Dissertation-I	6*-0-3	8	EDP-P2
8.	GP	General Proficiency	-	NC	
		Total	-	<b>22</b>	
		Total Contact Hours	<b>24</b>		

*\*This will not be a usual lecture session, but this is one to one interaction of each student with the concerned faculty member*

SEMESTER-IV					Course Type
S. No.	Subject Code	Courses	L-T-P	Credit	
		<b>PRACTICALS/PROJECT</b>			
1.	EE698	Dissertation-II	-	22	EDP-P3
2.	GP	General Proficiency	-	NC	
		Total	-	<b>22</b>	
		Total Contact Hours	<b>22</b>		

**Grand Total Credits = 90**

**Open Elective:** Course offered from other school

### List of Electives for M. Tech. (Power System)

#### Elective-I:

1. EE579: Cyber Security in Power Systems
2. EE581: Restructured Power System
3. EE583: Power Conditioning
4. EE587: Micro-Grids Systems
5. EE593: Modelling and Planning of Energy Systems
6. EE595: Computer Methods in Power Systems
7. EE699: Distribution System Analysis & Control
8. M.Tech. (PED, I&C and RES)-I Sem and Int. B.Tech.+M.Tech./MBA-VII Sem Electives

#### Specialized Elective-I:

1. EE578: Electric Vehicle Charging Substation
2. EE580: Machine Learning and Data Analytics in Power Systems
3. EE582: Power Sector Economics and Management
4. EE584: EHVAC Transmission

5. EE586: Power System Optimization
6. Specialized Electives-I of M. Tech. (PED, I&C and RES)

**Specialized Elective-II:**

1. EE675: Computer Applications to Power System Analysis
2. EE677: Control and Operation of Active Distribution Network
3. EE679: Power Quality Analysis and Mitigation
4. EE681: Soft Computing Techniques
5. EE683: Distributed Generation and Microgrids
6. EE695: Power System Quality
7. Specialized Electives-II of M. Tech. (PED, I&C & RES)

**Specialized Elective III:**

1. EE685: SCADA and Phasor Measurement Unit
2. EE687: Optimal Control Theory and Power System Applications
3. EE689: Demand Side Management
4. EE691: Power System Optimization
5. EE693: Electric Power Distribution
6. Specialized Electives-III of M. Tech. (PED, I&C & RES)

Nomenclature:

1. AEC: Ability Enhancement Courses
  - AEC-C: Ability Enhancement Courses Compulsory
  - SEC: Skill Enhancement Courses
2. CC: Core Courses
3. Elective Courses
  - E-DSE: Discipline Specific Elective
  - E-GE: Generic Elective
  - E-DP: Dissertation and Project