

**GOA UNIVERSITY**  
**Scheme of Teaching and Examination for**  
**Master of Engineering (Power and Energy System Engineering)**  
**Two years Full time Course**

<b>Semester-I</b>									
<b>Subject Code</b>	<b>Subject</b>	<b>Hours per week</b>			<b>Scheme of Examination</b>				
		<b>L</b>	<b>T</b>	<b>P</b>	<b>Theory (Hrs)</b>	<b>Credits</b>			
							<b>Theory</b>	<b>IA</b>	<b>Pract</b>
<b>MPE 1.1</b>	Non Conventional Energy systems	4	-	-	3	4	2	-	6
<b>MPE 1.2</b>	Advanced power Electronics	4	-	-	3	4	2	-	6
<b>MPE 1.3</b>	Computer aided Power system Analysis	4	-	-	3	4	2	-	6
<b>MPE 1.4</b>	Elective-I	4	-	-	3	4	2	-	6
<b>MPE 1.5</b>	Elective -II	4	-	-	3	4	2	-	6
<b>MPE 1.6</b>	Power Engineering lab-I	---	---	8	--	---	2	4	6
	<b>Total</b>	<b>20</b>	<b>-</b>	<b>8</b>	<b>-</b>	<b>20</b>	<b>12</b>	<b>4</b>	<b>36</b>

<b>Semester-II</b>									
<b>Subject Code</b>	<b>Subject</b>	<b>Hours per week</b>			<b>Scheme of Examination</b>				
		<b>L</b>	<b>T</b>	<b>P</b>	<b>Theory (Hrs)</b>	<b>Credits</b>			
							<b>Theory</b>	<b>IA</b>	<b>Pract</b>
<b>MPE 2.1</b>	Solid State AC/DC drives	4	-	-	3	4	2	-	6
<b>MPE 2.2</b>	Restructured Power System	4	-	-	3	4	2	-	6
<b>MPE 2.3</b>	Energy Auditing & Management	4	-	-	3	4	2	-	6
<b>MPE 2.4</b>	Elective-III	4	-	-	3	4	2	-	6
<b>MPE 2.5</b>	Elective -IV	4	-	-	3	4	2	-	6
<b>MPE 2.6</b>	Power Engineering lab-II	---	---	8	-	--	2	4	6
	<b>Total</b>	<b>20</b>	<b>-</b>	<b>8</b>	<b>-</b>	<b>20</b>	<b>12</b>	<b>4</b>	<b>36</b>

Semester-III										
Subject Code	Subject	Hours per week			Scheme of Examination					
		L	T	P	Theory (Hrs)	Credits				
						Theory	IA	Pract	Oral	Total
<b>MPE 3.1</b>	Power Electronic Interface for Renewable Energy Systems	4	-	--	3	4	2	-	--	6
<b>MPE 3.2</b>	Elective-V	4	-	--	3	4	2	-	--	6
<b>MPE 3.3</b>	Project	---	---	12	--	----	4	-	4	8
<b>MPE 3.4</b>	Seminar-I	---	---	8	--	----	2	-	2	4
	<b>Total</b>	<b>8</b>		<b>20</b>	<b>--</b>	<b>8</b>	<b>10</b>	<b>--</b>	<b>6</b>	<b>24</b>

Semester-IV										
Subject Code	Subject	Hours per week			Scheme of Examination					
		L	T	P	Theory (Hrs)	Credits				
						IA	Pract	Oral*	Total	
<b>MPE 4.1</b>	Dissertation	---	----	28	--	8	-	12		20
	<b>Total</b>	<b>-</b>	<b>-</b>	<b>28</b>		<b>8</b>	<b>-</b>	<b>12</b>		<b>20</b>

<b>Grand Total of all four semesters</b>	<b>48</b>	<b>-</b>	<b>64</b>	<b>48</b>	<b>42</b>	<b>8</b>	<b>18</b>	<b>116</b>
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# All Theory papers of 100 marks

## Elective lists

### ELECTIVE –I (MPE1.4)

MPE 1.4.1	Energy System Modeling and Analysis
MPE 1.4.2	Switch Mode Power Conversion
MPE 1.4.3	Optimization Techniques
MPE 1.4.4	Digital Protection of Power systems

### ELECTIVE-II (MPE 1.5)

MPE 1.5.1	Special Electrical Machines
MPE 1.5.2	Power System Transients and Over Voltages
MPE 1.5.3	DSP application to Power System
MPE 1.5.4	Power System Planning & operation

### ELECTIVE-III (MPE 2.4)

MPE 2.4.1	HVDC Transmission Technology
MPE 2.4.2	Wind Energy Conversion Systems
MPE 2.4.3	Distributed generation & Micro grids
MPE 2.4.4	Flexible AC Transmission Systems

### ELECTIVE –IV ( MPE 2.5)

MPE 2.5.1	Distributed Automation
MPE 2.5.2	Power quality Assessment and Mitigation
MPE 2.5.3	HV Electromagnetic Field Computation & Modelling
MPE 2.5.4	Electrical Machine Modeling and Analysis

### ELECTIVE –V ( MPE 3.2)

MPE 3.2.1	High Voltage Testing and Measurements
MPE 3.2.2	Finite Element Methods and applications
MPE 3.2.3	AI & its Applications to Power
MPE 3.2.4	Smart Grid