



**AMET**  
ACADEMY OF MARITIME EDUCATION AND TRAINING  
DEEMED TO BE UNIVERSITY  
(Under Section 3 of UGC Act 1956)

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**M.E - POWER SYSTEMS**

**Curriculum & Syllabus**

**OUTCOME BASED  
EDUCATION SYSTEM**

**(For the Batches Admitted from 2021-2022)**

## **VISION AND MISSION OF THE INSTITUTION**

### **VISION**

To sustain identity as a World Class Leader in Maritime Education and empower learners with wholesome knowledge through progressive innovation in training, research and development which will render students a unique learning experience and a transformation impact on the Global Society.

### **MISSION**

AMET will strive continuously to

- ❖ Impart value-based higher education and technical knowledge with uncompromising strides of an outstanding quality.
- ❖ Emerge as a Centre of Excellence inculcating skill development in recent technologies in accordance with industrial trends.
- ❖ Create World class research capabilities on par with the finest in the world and broaden student's horizons beyond classroom education.
- ❖ Nurture talent and entrepreneurship to enable all round personality development among students.
- ❖ Empower students across socio economic strata
- ❖ Make a positive difference to society through technical education.

## **VISION AND MISSION OF THE DEPARTMENT**

### **VISION**

To emerge as a Centre for higher learning and research through development of highly competent, innovative and world class Marine Electrical and Electronics Engineers while remaining sensitive to ethical, societal and environmental issues.

### **MISSION**

- ❖ To impart quality education in order to produce highly innovative, socio- economically conscious Marine Electrical and Electronics Engineers.
- ❖ To provide knowledge and skills, that is essential to meet the local and global demands in Marine Electrical and Electronics Engineering.
- ❖ To upgrade student's technical knowledge through industry interaction activities.
- ❖ To foster strong ethics, positive attitude and transform the Department into Centre of Excellence by promoting world class research and development to meet the challenging needs of society.
- ❖ To motivate and guide students for developing entrepreneurship or pursue higher education and train them for overall personality development.

## **PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

Master of Engineering in Power Systems program is designed to prepare the graduates will,

**PEO1:** Have a successful career and carryout innovative research in power system Engineering and its related disciplines.

**PEO2:** Provide optimum solutions to the challenging problems in power and energy sectors with ethical values and social responsibility.

**PEO3:** Demonstrate life-long independent and reflective learning skills in their career.

**PEO4:** Exhibit project management skills and ability to work in collaborative, multidisciplinary tasks in their profession.

## **PROGRAM OUTCOMES (POs)**

Master of Technology in Power Systems program is designed to prepare the graduates will have,

**PO1:** An ability to independently carry out research/investigation and development work to solve practical problems.

**PO2:** An ability to write and present a substantial technical report /document.

**PO3:** An ability to apply advanced concepts of Electrical Power Engineering to analyse, design and develop Electrical systems to put forward power systems Engineering solutions globally.

**PO4:** Ability to use advanced techniques, skills and modern scientific and Engineering tools for professional practice in power systems.

**PO5:** Ability to communicate effectively at all levels of projects and its management and demonstrate leadership qualities in a multidisciplinary scientific research team.

**PO6:** An ability to engage in independent, reflective, and lifelong learning for the benefits of society.

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING****CURRICULUM FOR M.E (POWER SYSTEMS)****SEMESTER I**

<b>S. No</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Contact Hours</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>THEORY</b>								
1.	BS	PEMTC01	Applied Mathematics for Electrical Engineers	3	3	0	0	3
2.	PC	PEEE101	Advanced Power System Analysis	4	3	1	0	4
3.	PC	PEEE102	Power System Operation and Control	3	3	0	0	3
4.	PC	PEEE103	Research Methodology and IPR	3	3	0	0	3
5.	PEC		Professional Elective - I	3	3	0	0	3
6.	MC		Audit Course-I	3	3	0	0	0
<b>PRACTICAL</b>								
7.	PC	PEEE1PA	Power System Laboratory-I	2	0	0	2	1
8.	PC	PEEE1PB	Power System Operation and Control Laboratory	2	0	0	2	1
<b>TOTAL</b>				<b>23</b>	<b>18</b>	<b>1</b>	<b>4</b>	<b>18</b>

L- Lecture; T-Tutorial; P-Practical; C-Credit

## SEMESTER II

S. No	Category	Course Code	Course Title	Contact Hours	L	T	P	C
<b>THEORY</b>								
1.	PC	PEEE201	Power System Protection	3	3	0	0	3
2.	PC	PEEE202	Power System Dynamics	3	3	0	0	3
3.	PC	PEEE203	Design of Controllers in power applications	3	3	0	0	3
4.	PEC		Professional Elective - II	3	3	0	0	3
5.	PEC		Professional Elective – III	3	3	0	0	3
6	OEC		Open Elective - I	3	3	0	0	3
<b>PRACTICAL</b>								
7	PC	PEEE2PA	Power System Laboratory-II	2	0	0	2	1
8	PC	PEEE2PB	Drives and Control Laboratory	2	0	0	2	1
9	PROJECT	PEEE2PC	Mini Project	4	0	0	4	2
<b>TOTAL</b>				<b>26</b>	<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>

### SEMESTER III

S. No	Category	Course Code	Course Title	Contact Hours	L	T	P	C
<b>THEORY</b>								
1	PEC		Professional Elective – IV	3	3	0	0	3
2	PEC		Professional Elective – V	3	3	0	0	3
3	PROJECT	PEEE3PA	Project Phase - I	12	-	-	12	6
4	Internship	PEEE3PB	Internship	-	-	-	-	6
<b>TOTAL</b>				<b>18</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>18</b>

### SEMESTER IV

S. No	Category	Course Code	Course Title	Contact Hours	L	T	P	C
<b>THEORY</b>								
1.	PROJECT	PEEE4PA	Project Phase - II	24	0	0	24	12
<b>TOTAL</b>				<b>24</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>

**Audit courses:**

1. PEEEA01-English for Research Paper Writing
2. PEEEA02-Disaster Management
3. PEEEA03-Sanskrit for Technical Knowledge
4. PEEEA04-Value Education
5. PEEEA05-Constitution of India
6. PEEEA06-Pedagogy Studies
7. PEEEA07-Stress Management by Yoga
8. PEEEA08-Personality Development through Life Enlightenment Skills.

**List of professional elective courses (PEC) offered by the Department**

Sl. No.	Course Code	Title of the PEC	Contact Hours	L	T	P	C
<b>PEC1</b>							
1	PEEEE01	Control System Design	3	3	0	0	3
2	PEEEE02	Soft Computing Techniques	3	3	0	0	3
3	PEEEE03	Power Distribution Systems	3	3	0	0	3
4	PEEEE04	SWAYAM/MOOCs Course	3	3	0	0	3
<b>PEC2</b>							
1	PEEEE05	Smart Grid Design and Analysis	3	3	0	0	3
2	PEEEE06	Electrical Transients in Power Systems	3	3	0	0	3
3	PEEEE07	Modern Optimization Techniques in Power Systems	3	3	0	0	3
4	PEEEE08	SWAYAM/MOOCs Course	3	3	0	0	3
<b>PEC3</b>							
1	PEEEE09	Industrial Power System Analysis and Design	3	3	0	0	3
2	PEEEE10	Energy Management and Auditing	3	3	0	0	3



3	PEEEE11	Distributed Generation and Micro Grid	3	3	0	0	3
4	PEEEE12	SWAYAM/MOOCs Course	3	3	0	0	3
<b>PEC4</b>							
1	PEEEE13	Special Machines and their Controllers	3	3	0	0	3
2	PEEEE14	Analysis of Electrical Machines	3	3	0	0	3
3	PEEEE15	Artificial Neural Networks Applied to Power Systems	3	3	0	0	3
4	PEEEE16	SWAYAM/MOOCs Course	3	3	0	0	3
<b>PEC5</b>							
1	PEEEE17	Intelligent Controllers	3	3	0	0	3
2	PEEEE18	SCADA System and Applications Management	3	3	0	0	3
3	PEEEE19	Distribution Systems Management and Automation	3	3	0	0	3
4	PEEEE20	SWAYAM/MOOCs Course	3	3	0	0	3

**List of open elective courses (OEC) offered by EEE Department**

Sl. No.	Course Code	Title of the OEC1	Contact Hours	L	T	P	C
1	PEEEO01	Wind Energy System Operation and Control	3	3	0	0	3
2	PEEEO02	Mechatronics	3	3	0	0	3

**CREDIT SHARE**

Semester	Contact Hours	Lecture	Tutorial	Practical	Credits
Semester 1	23	18	1	4	18
Semester 2	26	18	0	8	22
Semester 3	18	6	0	12	18
Semester 4	24	0	0	24	12
<b>TOTAL</b>	<b>91</b>	<b>42</b>	<b>1</b>	<b>48</b>	<b>70</b>

Basic Science	Professional Core	Professional Elective	Open Elective	Project /Internship	Total
<b>3</b>	<b>23</b>	<b>15</b>	<b>3</b>	<b>26</b>	<b>70</b>

