

PSN COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous)

Institution Accredited by NACC A+ Grade)

Melathediyoor, Tirunelveli 627152



Department of Marine Engineering

(Approved by DGS with A2 Grade)

Curriculum

Regulation -2022

INSTITUTE VISION
To emerge as a pioneer institute inculcating engineering education, skills, research, values and ethics.
INSTITUTE MISSION
<ul style="list-style-type: none"> • To achieve greater heights of excellence in technical knowledge and skill development through innovative teaching and learning practices. • To develop the state of art infrastructure to meet the demands of technological revolution. • To improve and foster research in all dimensions for betterment of society. • To develop individual competencies to enhance innovation, employability, and entrepreneurship among students. • To instil higher standards of discipline among students, inculcating ethical and moral values for societal harmony and peace.

DEPARTMENT VISION
To Produce competent, disciplined quality Engineers and administrators in accordance with global standards in Marine Engineering with capability of accepting new challenges.
DEPARTMENT MISSION
<ul style="list-style-type: none"> • To develop and train the students in order to meet dynamic needs and demands of the society. • To promote research and continuing education. • To enhance professional and entrepreneurial skills with ethical values through industry-institute interaction.

PROGRAM EDUCATIONAL OBJECTIVES(PEOs)	
Sl.No.	PEOs
PEO1	To impart knowledge on the fundamental principles of mathematics, science, and sub-disciplines in the field of Marine Engineering.
PEO2	To make them to undergo industrial training, and professional development subjects inculcating the habit of perpetual learning for career development.
PEO3	To develop effective communication skills and make them socially responsible to work cooperatively in all environments.

PROGRAM OUTCOMES			
PO'S No.	KNOWLEDGE	STATEMENT	APPLIANCE
1	Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems..	Theory/ Practical/ Project work
2	Problem Analysis	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	Theory/ Practical/ Projects

3	Design/Development of Solutions	Design solutions for complex engineering problems and design system components or processes that meet the needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations..	Theory/ Practical/ Projects
4	Conduct Investigations of Complex Problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	Theory/ Practical
5	Modern Tool usage	Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.	Theory/ Practical/ Project work
6	The Engineer and Society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	Theory/ Industrial visit/ In plant training
7	Environment and Sustainability	Understand the impact of the professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development. Top of Form	Theory/ Industrial Visit/ In plant Training
8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	Theory/ Industrial Visit/ In plant Training
9	Individual and Teamwork	Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.	Projects
10	Communication	Communicate effectively on complex engineering activities with the engineering community and with society at large such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.	Projects/ Seminar/ Mini Project
11	Project Management and Finance	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	Projects
12	Life-long Learning	Recognize the need for, and have the preparation and ability to engage in	Projects/ Higher Studies

		independent and life-long learning in the broadest context of technological change.	
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PROGRAMSPECIFICOUTCOMES(PSOs)
PSO1: Attain knowledge to carry out the watch keeping duties of an engineer officer onboard ship in a safely manner. PSO2: To provide hands on training in specific technical courses so that the graduates can develop the skills to work as a team and gain leadership skills and also readily employable or become an entrepreneur.

Semester-01

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
1	IC610001	Professional English I	IC	Theory	2	0	0	2
2	IC610002	Matrices and Calculus	IC	Theory	2	1	0	3
3	IC610003	Engineering Physics	IC	Theory	3	0	0	3
4	IC610004	Engineering Chemistry	IC	Theory	3	0	0	3
5	CS610005	Problem Solving and 'C' Programming	IC	Theory	3	0	0	3
6	ME610006	Engineering Graphics with CAD	IC	Theory with Practical Component	2	0	2	3
7	IP610101	Physics & Chemistry Laboratory	IC	Practical	0	0	3	1.5
8	IP610102	Programming in 'C' Laboratory	IC	Practical	0	0	3	1.5
9		NCC/NSS/NSO*	IM	Institute Mandatory	1	0	0	0
10	IC610007	Tamil Marabu / Heritage of Tamil	IC	Theory	1	0	0	1
		Total			17	1	8	21

Semester-02

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
11	IC620008	Professional English II	IC	Theory with Practical Component	2	0	2	3
12	IC620009	Transforms & Partial Differential Equations	IC	Theory	2	1	0	3
13	IC620010	Engineering Materials (for Non Circuit Branches)	IC	Theory	3	0	0	3
	IC620011	Semiconductor Physics (for Circuit Branches)			3	0	0	
14	ME620012	Engineering Mechanics (for Non Circuit Branches)	PC	Theory with project	3	0	0	3
	CS620013	Fundamentals of Artificial Intelligence (for Circuit Branches)			3	0	0	
15	CS620014	Python Programming	IC	Theory	3	0	0	3
16	ME620015	Basic Engineering	IC	Theory	3	0	0	3
17	IP620103	Python Laboratory	IC	Practical	0	0	3	1.5
18	IP620104	Engineering practice laboratory	IC	Practical	0	0	3	1.5

19	IM620401	Environmental Studies	IM	Institute Mandatory	2	0	0	0
20	IC620016	Tamils and technology	IC	Theory	1	0	0	1
		Total			25	1	8	22

Semester-03

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
21	MR630201	Marine Engineering Thermodynamics	PC	Theory	3	1	0	4
22	MR630202	Elementary Navigation & Survival at Sea	PC	Theory	4	0	0	4
23	MR630203	Theory of Machines	PC	Theory	3	1	0	4
24	ME630204	Strength of Materials	PC	Theory with project	3	1	0	4
25	MR630205	Electrical Measurements & DC Machines	PC	Theory with Practical Component	2	0	2	4
26		Professional elective -1	PE	Theory	4	0	0	4
27	MR630301	Strength of Materials Laboratory	PC	Practical	0	0	3	2
28	MR630302	Heat & Boiler Chemistry Laboratory	PC	Practical	0	0	3	2
29	MR630501	Marine Safety Skills-I (Lower)	EEC	Skill based course	0	0	1	1
30	IM630402	Universal Human Values	IM	Theory	2	0	0	0
		Total			23	3	9	29

Semester-04

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
31	MR640203	Marine Refrigeration & Air Conditioning System	PE	Theory	3	1	0	4
32	MR640204	AC Electrical Machines	PC	Theory with Practical Component	2	0	2	4
33	MR640205	Ship structure & Construction	PC	Theory with project	3	0	1	4
34	MR640206	Marine Hydraulics & Fluid Machineries	PC	Theory	3	1	0	4
35		Professional Elective-2	PE	Theory	4	0	0	4
36		Institute Elective-1	IE	Theory	4	0	0	4

37	MR640303	Marine Hydraulics Laboratory	PC	Practical	0	0	3	2
38	MR640304	Marine Electronics Laboratory	PC	Practical	0	0	3	2
39	MR640502	Marine Safety Skills-II (Lower)	EEC	Skill based course	0	0	1	1
40		In plant Training (2 Weeks)	IM					0
		Total			19	2	10	29

Semester-05

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
41	MR650207	Marine Diesel Engine -I	PC	Theory with Practical Component	4	0	0	4
42	MR650208	Marine Auxiliary Machines-I	PC	Theory With project	4	0	0	4
43	MR650209	Naval Architecture- I	PC	Theory	3	1	0	4
44		Institute Elective - 2	IE	Theory	4	0	0	4
45		Professional Elective - 3	PE	Theory	4	0	0	4
46		Professional elective - 4	PE	Theory	3	0	0	3
47	MR650305	Electrical Machines & Measurement Laboratory	PC	Practical	0	0	3	2
48	MR650306	Marine Auxiliaries – I Laboratory	PC	Practical	0	0	3	2
49	MR650503	Marine Safety Skills - I (Higher)	EEC	Skill based course	0	0	2	1
50	MR650801	Programme Mandatory	PM	Theory	2	0	0	0
		Total			24	1	8	28

Semester-06

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
51	MR660210	Marine Diesel Engine- II	PC	Theory with Practical Component	4	0	0	4
52	MR660211	Marine Auxiliary Machines-II	PC	Theory with project	4	0	0	4
53	MR660212	Naval Architecture-II	PC	Theory	3	1	0	4
54		Institute Elective - 3	IE	Theory	3	0	0	3
55		Professional Elective - 5	PE	Theory	4	0	0	4

56		Professional Elective-6	PE	Theory	4	0	0	4
57	MR660307	Simulator Laboratory	PC	Practical	0	0	3	2
58	MR660308	Marine Auxiliaries-II Laboratory	PC	Practical	0	0	3	2
59	MR660504	Marine Safety Skills –II (Higher)	EEC	Skill based course	0	0	2	1
60	IM660403	Professional Ethics	IM	Theory	2	0	0	0
61		Internship	IM					0
		Total			25	1	2	29

Semester-07

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
62	MR670309	Marine Workshop Practical, Afloat Training & Voyage Training	PC	Practical	10 hrs per day- 6 days a week, 25 weeks			30
		Total			1500Hours			30

Semester-08

Sl.No	Course code	Course Name	Classification	Course Type	L	T	P	C
63	MR680213	IMO & Maritime Convention	PC	Theory	4	0	0	4
64	MR680214	STCW & Class IV Preparation	PC	Theory	4	0	0	4
65	MR680215	Ship Operation & Management	PC	Theory	4	0	0	4
66	MR680505	Project Work	EEC	Practical	0	0	18	27
		Total			12	0	20	43