

PSN College of Engineering and Technology
Department of Marine Engineering
Course Outcomes
Regulation 2018

Course Name: C101 (501001/ TECHNICAL ENGLISH)

CO	COURSE OUTCOMES
C101.1	Learners will be able to communicate with one or many listeners' using appropriate communicative strategies
C101.2	Learners will be able to write cohesively and coherently and flawlessly avoiding grammatical errors
C101.3	Learners will be able to read different genres of texts adopting various reading strategies
C101.4	Learners will be able to listen/view and comprehend different Spoken discourses/excerpts in different accents
C101.5	Learners will be able to communicate with writing—Précis-writing-Synopsis

Course Name: C102 (501002/ Elementary Mathematics for Engineers)

CO	COURSE OUTCOMES
C102.1	At the end of this course, the student has dominant knowledge in matrices
C102.2	At the end of this course, the student has dominant knowledge in elements of logic
C102.3	At the end of this course, the student has dominant knowledge in differential & integral calculus
C102.4	At the end of this course, the student has dominant knowledge in quantitative technique
C102.5	At the end of this course, the student has dominant knowledge in analytical geometry

Course Name: C103 (508001/ BASIC THERMODYNAMICS)

CO	COURSE OUTCOMES
C103.1	Apply the basic concepts of first law of thermodynamics for steady and unsteady flow conditions
C103.2	Apply the basic concepts of second law of thermodynamics for thermodynamics systems.
C103.3	Apply the basic concepts of Carnot theorem for available energy system

C103.4	Derive the Air standard efficiency of gas power cycles
C103.5	Calculate the properties of composition of fuels and study the combustion equations.
Course Name: C104 (508002 / BASIC ELECTRICAL AND ELECTRONICS ENGINEERING)	
CO	COURSE OUTCOMES
C104.1	To introduce the concepts about A.C and D.C circuits, and Magnetic Circuits.
C104.2	To impart knowledge about operation of Electronic Devices.
C104.3	To familiarize the students with the operation and application of electronic devices.
C104.4	To study the basic concept of digital electronics and numbering system.
C104.5	To familiarize the students with the fundamentals of communication engineering
Course Name: C105 (508003/ ENGINEERING MECHANICS)	
CO	COURSE OUTCOMES
C105.1	To understand basic laws and theorems regarding mechanics.
C105.2	To evaluate various forces, couple and moment.
C105.3	To determine centroid and MOI of various lamina.
C105.4	To understand motion of a body.
C105.5	Solve the problems of simple system with sliding friction and calculate linear and angular acceleration of moving body in general plane motion.
Course Name: C106 (508004/ WORKSHOP TECHNOLOGY)	
CO	COURSE OUTCOMES
C106.1	Discuss the construction and working of measuring instruments.
C106.2	Explain the mechanism of working and material removal of conventional machine tools
C106.3	Explain the construction, working and material removal of conventional machine tools

C106.4	Learn Abrasive processes and gear cutting
C106.5	writing—Précis-writing-Synopsis

Course Name: C107 (508101/ GEOMETRICAL DRAWING)	
CO	COURSE OUTCOMES
C107.1	Able to understand the plane curves and free hand sketching
C107.2	Able to understand the projection of points, lines and plane surfaces
C107.3	Able to understand the projection of solids
C107.4	Able to understand the projection of sectioned solids and development of surfaces
C107.5	Able to understand the isometric projections

Course Name: C108 (508102/ ELECTRICAL AND ELECTRONICS LABORATORY)	
CO	COURSE OUTCOMES
C108.1	Design house wiring system.
C108.2	Measure the various electrical quantities in a circuit.
C108.3	Attend the trouble suiting of electrical equipments
C108.4	Check the status of semi conductor devices
C108.5	Measure wave form using CRO

Course Name: C109 (508103/ MARINE WORKSHOP PRACTICES)	
CO	COURSE OUTCOMES
C109.1	To Prepare two matting Parts

C109.2	To know about basic Machineries in Machine Shop.
C109.3	To know about the metal Joining Process by Welding
C109.4	To know about Various parts of Marine Machinery.
C109.5	Able to understand and prepare chart & models,

Course Name: C201 (501008/ ENGINEERING MATHEMATICS – I)

CO	COURSE OUTCOMES
C201.1	At the end of the course students able to known Multivariate functions and Multiple integrals
C201.2	At the end of the course students able to known Vector Algebra
C201.3	At the end of the course students able to known Vector Calculus
C201.4	At the end of the course students able to known Ordinary Differential Equations
C201.5	At the end of the course students able to known Analytic Functions

Course Name: C202 (508005/ APPLIED THERMODYNAMICS)

CO	COURSE OUTCOMES
C202.1	Students will be capable to understand regarding petrol and diesel engine
C202.2	Students will be capable to do work with boiler in different types.
C202.3	Students will be capable to understand regarding steam nozzles & Turbines
C202.4	Students will be capable to understand regarding air compressor
C202.5	Students will be capable to understand regarding Refrigeration & Air conditioning

Course Name: C203 (508006/ SOLID MECHANICS)

CO	COURSE OUTCOMES
C203.1	Students will able to understand stress, strain & deformation of solids
C203.2	Students will able to understand transverse loading on beams and stresses in beam
C203.3	Students will able to understand torsion
C203.4	Students will able to understand beam deflection & column
C203.5	Students will able to understand thin cylindrical and spherical shells

Course Name: C204 (508007/ BASICS OF COMPUTER AND PYTHON PROGRAMMING)

CO	COURSE OUTCOMES
C204.1	Able to have fundamental knowledge on basics of computers and Number System
C204.2	Able to Understand the fundamentals in Python
C204.3	Able to understand the concept of operators and control statements in Python
C204.4	Able to use different Functions in Python
C204.5	Able to work on the files and List concepts of Python

Course Name: C205 (508008/ THEORY OF MACHINES - I)

CO	COURSE OUTCOMES
C205.1	Discuss the basics of mechanism
C205.2	Calculate velocity and acceleration in simple mechanisms
C205.3	Develop CAM profiles
C205.4	Solve problems on gears and gear trains

C205.5	Examine friction in machine elements
Course Name: C206 (508009/ ENGINEERING MATERIALS & METALLURGY)	
CO	COURSE OUTCOMES
C206.1	Students will be able to identify the material properties
C206.2	Students will be able to find the failure of metals
C206.3	Students will be able to know about heat treatment methods
C206.4	Students will be able to understand testing of metals
C206.5	Students will be able to understand composite materials and their properties
Course Name: C207 (508104/ SOLID MECHANICS LABORATORY)	
CO	COURSE OUTCOMES
C207.1	At the end of these course cadets able to know and test on Tension Machine
C207.2	At the end of these course cadets able to know and test on Compression Machines
C207.3	At the end of these course cadets able to know and test on Hardness Testing Machine
C207.4	At the end of these course cadets able to know and test on Deflection Testing Machine

Course Name: C208 (508105/COMPUTER PROGRAMMING LAB USING PYTHON LABORATORY)	
CO	COURSE OUTCOMES
C208.1	Able to create and edit their own documents, sheets and presentations
C208.2	Write their own programs to solve problems by using Python
Course Name: C209 (508106/MARINE ENGINEERING MACHINE DRAWING)	
CO	COURSE OUTCOMES
C209.1	Students will be able to read the conventional drawing
C209.2	Students will be capable to work on assembly sections
C209.3	Students will be able to know fasteners types & uses
C209.4	Students will be able read the machineries components drawing
C209.5	Students will be capable to read the marine components drawings
Course Name: C301 (501014/ENGINEERING MATHEMATICS - II)	
CO	COURSE OUTCOMES
C301.1	Students will be able to understand Fourier Series
C301.2	Students will be able to understand the Partial Differential Equations I
C301.3	Students will be able to understand the Partial Differential Equations II
C301.4	Students will be able to understand the Complex Numbers
C301.5	Students will be able to understand the Theory of equations
Course Name: C302 (508010/SEAMANSHIP)	
CO	COURSE OUTCOMES

C302.1	Students will be able to understand the duties and locations in the ship
C302.2	Students will be able to understand the navigation equipments use in ship and working
C302.3	Students will be able to understand the life saving apparatus and how to operate , function
C302.4	Students will be able to understand the survival equipments and life boat working
C302.5	Students will be able to understand the emergency procedures and their duties ,how to save a life

CourseName:C303 (508011/Theory of Machines - II)

CO	COURSE OUTCOMES
C303.1	Force analysis of Mechanisms and turning moment diagram and flywheel
C303.2	Concept of balancing
C303.3	Free and forced vibration of single degree of freedom system and Multi Degree of freedom system
C303.4	SYNTHESIS OF MECHANISMS
C303.5	Learn and solve problems on governors and gyroscopes

Course Name: C304 (508012/ELECTRICAL MEASUREMENTS AND DC MACHINES)

CO	COURSE OUTCOMES
C304.1	To show their knowledge about the working of measuring instruments.
C304.2	To express the concepts about measurement practices and measuring instruments.
C304.3	To express the function of transducers and data acquisition system
C304.4	To explain the operation of D.C. generators.
C304.5	To explain the operation and characteristics of D.C. motors.

Course Name: C305 (508013/Marine Refrigeration & Air Conditioning)

CO	COURSE OUTCOMES
C305.1	Students will be able to understand the basic concepts of refrigeration & Air conditioning
C305.2	Students will be able know about marine refrigeration plant

C305.3	Students will be able to understand Psychometric properties and systems
C305.4	Students will be able to understand the cargo ship air conditioning
C305.5	Students will be able to understand and work on heat exchangers
Course Name: C306 (508014/MARINE BOILER & STEAM ENGINEERING)	
CO	COURSE OUTCOMES
C306.1	Students able to understand marine boilers & its functioning
C306.2	Students able to understand operation & maintenance of boilers
C306.3	Students able to understand marine steam engines
C306.4	Students able to understand the lubrication of marine components in turbine
C306.5	Students able to understand the functions & types of condensers
CourseName:C307 (501801/ENVIRONMENTAL STUDIES)	
CO	COURSE OUTCOMES
C307.1	Students will be able to understand the different environmental systems.
C307.2	Students will be able to know about biodiversity.
C307.3	Students will be able to understand different environmental pollution.
C307.4	Students will be able study and understand the natural resources.
C307.5	Students will be able to understand social issues.
Course Name: C308 (508107/DYNAMICS LABORATORY)	
CO	COURSE OUTCOMES
C308.1	At the end of this section, cadets able to supplement the principles learn in kinematics and Dynamics of Machinery.
C308.2	At the end of this section, cadets able to Understand how certain measuring devices are used for dynamic testing.

Course Name: C309 (508108/BOAT BUILDING AND SHIP MODELING LABORATORY)	
CO	COURSE OUTCOMES
C309.1	Students will be able to build a boat & ships for different types
C309.2	Students will be able to know about the classification rules applicable to the different types of boats & ships
Course Name: C310 (508109/HEAT & BOILER CHEMISTRY LABORATORY)	
CO	COURSE OUTCOMES
C310.1	At the end of course, Marine cadets shall capable to work on marine heat engines and canalization of boiler feed water condition before operation.
C310.2	At the end of course, Marine cadets shall capable to Draw valve timing diagram
C310.3	At the end of course, Marine cadets shall capable to COP test on test rig
C310.4	At the end of course, Marine cadets shall capable to Chemical test analysis
Course Name: C401 (508015/NON DESTRUCTIVE TESTING)	
CO	COURSE OUTCOMES
C401.1	Students will learn about the basic concepts & importance of NDT
C401.2	At the end of unit students will know about DPT & MPI testing methods and its applications
C401.3	At the end of unit students will know about RT testing methods and its applications
C401.4	At the end of unit students will know about UT testing methods and its applications
C401.5	At the end of unit students will know about ECT & AE testing methods and its applications
Course Name: C402 (508016/NAVAL ARCHITECTURE - I)	
CO	COURSE OUTCOMES

C402.1	Students will gain knowledge about Hydrostatics principles
C402.2	To calculate the various forces acting on an object in water and different terminologies used for the loading & unloading of the ship.
C402.3	Also becomes well versed about Transverse and Longitudinal stability & Launching of ships
C402.4	Students will gain knowledge about longitudinal stability and trim
C402.5	Students will gain knowledge about launching and docking
Course Name: C403 (508017/SHIP STRUCTURE & CONSTRUCTION)	
CO	COURSE OUTCOMES
C403.1	At the end of topic student will get knowledge ship terms & terminology
C403.2	Students al so get knowledge on shell & deck framing
C403.3	Students al so get knowledge on forward and aft structure
C403.4	Students will able to know about free board & tonnage
C403.5	Students will able to know about ship yard
Course Name: C404 (508018/MARINE ELECTRONICS)	
CO	COURSE OUTCOMES
C404.1	At the end of the course students will learn amplifier theory, digital circuits, logic system and gates.
C404.2	At the end of unit students will know about analog and digital converters and their applications.
C404.3	At the end of unit students will know about electronics and instrumentations
C404.4	At the end of unit students will know about the industrial electronics
C404.5	At the end of unit students will know about the microprocessor and micro controller.
Course Name: C405 (508019/MARINE HYDRAULICS & MACHINERIES)	
CO	COURSE OUTCOMES
C405.1	To understand the various properties of fluid.
C405.2	To understand the various equation on the flow of fluid

C405.3	To know about the movement of flow of fluid
C405.4	To study about the working & characteristics of machinery(Pump)
C405.5	To study about the working & characteristics of machinery(Turbine)
Course Name: C406 (508020/AC ELECTRICAL MACHINES)	
CO	COURSE OUTCOMES
C406.1	Express their knowledge in the procedure for producing electricity on board ships through alternators and associated controls.
C406.2	Explain the principle, features and types of transformers
C406.3	Explain the principle and characteristics of synchronous motors.
C406.4	The express their knowledge in the principle of working and starting methods of Induction motors..
C406.5	The expose their knowledge in Speed control and trouble shooting of induction Machines.
Course Name: C407 (508110/MARINE HYDRAULICS LABORATORY)	
CO	COURSE OUTCOMES
C407.1	At the end of the course students able to know about orifice meter
C407.2	At the end of the course students able to know about venturi meter
C407.3	At the end of the course students able to know about rota meter
C407.4	At the end of the course students able to know about pumps
C407.5	At the end of the course students able to know about turbines
Course Name: C408 (508111/MARINE ELECTRONICS LABORATORY)	
CO	COURSE OUTCOMES
C408.1	At the end of the course students able to study on logic gates with different types
C408.2	At the end of the course students able to know about the design of registers
C408.3	At the end of the course students able to know about the design of rectifiers
C408.4	At the end of the course students able to know about the mathematical functions

C408.5	At the end of the course students able to the data functioning
Course Name: C409 (508112/ELECTRICAL MACHINES & MEASUREMENTS LABORATORY)	
CO	COURSE OUTCOMES
C409.1	At the end of the course, the students will able to Use characteristics of various electrical drives depending on their type excitation.
C409.2	At the end of the course, the students will able to Develop knowledge helpful for application of DC and AC machines.
C409.3	At the end of the course, the students will able to Conduct speed control of different types of electrical machines.
C409.4	At the end of the course, the students will able to Conduct different types of testing in electrical machines.
C409.5	At the end of the course, the students will able to Apply the procedure for the measurement of physical quantity using various sensors.
Course Name: C501 (508021/MARINE INTERNAL COMBUSTION ENGINES - I)	
CO	COURSE OUTCOMES
C501.1	Understand the basic concepts of IC engines
C501.2	Summarize the basic features, engine components & cooling systems in engines
C501.3	Study scavenging systems in engines
C501.4	Classify the fuel refining & emission control provisions
C501.5	Understand the basic properties of lubrication oil
CourseName:C502 (508022/ MARINE AUXILIARY MACHINES-I)	
CO	COURSE OUTCOMES
C502.1	Understand and apply about engine room layout of machineries and various pipelines in the engine room.
C502.2	Remember & understand the construction and working of various valves, filters and packing's
C502.3	Understand & apply on various types of pumps with their construction and working principle with performance and characteristics.
C502.4	Rremember & understand on shell and tube, plate type heat exchanger and evaporators with RO plant
C502.5	Understand about construction & operation of various types of steering gear system in ships and safety features
Course Name: C503 (508023 MARINE ELECTRICAL TECHNOLOGY)	

CO	COURSE OUTCOMES
C503.1	Understand the knowledge on Regulations observed onboard ships regarding electrical equipments
C503.2	Remember about Different types of electrical Instruments and Switch Gear used on board Ship
C503.3	Understand & apply and find out and rectify various kinds of faults onboard ships.
C503.4	Rremember & understand on Specification of cables and Type of Lighting systems fitted on board
C503.5	Apply the knowledge towards Maintenance of electrical equipments, instruments, system components etc.

Course Name: C504 (508024 NAVAL ARCHITECTURE –II)

CO	COURSE OUTCOMES
C504.1	Understand & analyse the resistance of ships
C504.2	Explain about propellers & analyse propeller pitch and hull efficiency
C504.3	Describe about rudders & analyse torque & force on rudder
C504.4	Elaborate about waves & analyse wave pattern and amplitudes
C504.5	Apply knowledge in ship design and sea trial of ships

Course Name: C505 (508025/ SHIP FIRE PREVENTION & CONTROL)

CO	COURSE OUTCOMES
C505.1	Understand, Remember & apply the fire protection arrangement on ship
C505.2	Understand, Remember & apply the fire Detection and safety systems details on ship according to the SOLAS convention
C505.3	Understand & apply the Fire fighting equipments, requirements according to the convention & regulation for the standards of safety
C505.4	Understand, Remember & apply the Fire fighting practices in port and dry dock and fire drill methods along with the leadership duties and responsibilities
C505.5	Controlling and containment of fire & Rescue operations along with the maintenance required.

CourseName:C506 (501802/ HUMAN RIGHTS AND VALUE EDUCATION)

CO	COURSE OUTCOMES
C506.1	Students can be able to understand about the significance of the present world.

C506.2	Students can be able to illustrate about the salient values for life
C506.3	Students can be able to elaborate about the different human rights
C506.4	Students can be able to explain about various theories, classification and rules of human rights
C506.5	Students can be able to describe the various legislative procedures
CourseName:C508 (508113 FIRE CONTROL LABROTORY)	
CO	COURSE OUTCOMES
C508.1	Students will get operating knowledge about Different types of fire extinguishers& able to Fight different types of fire on board ships, Refilling all types of fire extinguishers
C508.2	Students will be able to operate different types of fire fighting equipment's Viz. fire pumps, hydrants and hoses
Course Name: C509 (508114 MARINE AUXILIARIES –I LABORATORY)	
CO	COURSE OUTCOMES
C509.1	Students can be able to get practical knowledge on overhauling of cylinder head with liner, piston, air stating& cylinder relief valve
C509.2	Students can be able to get practical knowledge on overhauling of fuel pump, fuel injector, air compressor valve, and maintenance on purifier and heat exchangers
Course Name: C510 (508115 MARINE MACHINERY & SYSTEM DESIGN USING CAD)	
CO	COURSE OUTCOMES
C510.1	Student can be able to design bearings, gears & IC engine parts.
C510.2	Student can be able to develop & design of marine auxiliary components.

Course Name: C601 (508026/MARINE INTERNAL COMBUSTION ENGINE-II)	
CO	COURSE OUTCOMES
C601.1	Students can be able to illustrate various fuel pumps.
C601.2	Students can be able to understand and analyze maneuvering systems.
C601.3	Students can be able to explain forces and stress in engine.
C601.4	Students can be able to classify and study medium speed engine parts.
C601.5	Students can be able to describe and summarize engine construction.
Course Name: C602 (508027/PRACTICAL MARINE AUTOMATION)	
CO	COURSE OUTCOMES
C602.1	Students can be able to illustrate about electronic measuring instruments
C602.2	Students can be able to understand about automatic systems
C602.3	Students can be able to apply the working of PLCs in real time environment
C602.4	Students can be able to classify and explain about CNCs
C602.5	Students can be able to apply the knowledge gained about embedded systems in real time applications
Course Name: C603 (508028 MARINE AUTOMATION & CONTROL ENGINEERING)	
CO	COURSE OUTCOMES
C603.1	Student can be able to understand the functions of various automatic controller and analyze the problem
C603.2	Student can be able to explain the various types of actuators and its functions
C603.3	Student can be able to describe the various types of signal transmitting devise
C603.4	Student can be able illustrate controlling mechanism used in ships
C603.5	Student can be able to summarize the about main engine control applications

Course Name: C604 (508029/SHIP OPERATION & MANAGEMENT)	
CO	COURSE OUTCOMES
C604.1	Students can be able to illustrate about structure of a shipping company
C604.2	Students can be able to understand about commercial shipping practice like port procedures and freight rates
C604.3	Students can be able to elaborate about marine insurance policies
C604.4	Students can be able to explain about statutory regulations related to marine
C604.5	Students can be able to describe about International convention on STCW for seafarers
Course Name: C605 (508030/MARINE AUXILIARY MACHINES-II)	
CO	COURSE OUTCOMES
C605.1	Students can be able to understand & apply the MARPOL regulations with the working principle of OWS & STP
C605.2	Students can be able to understand & apply on the construction and working principle of various deck machinery, purifier and air compressors.
C605.3	Students can be able to remember & understand the shafting alignment with thrust block
C605.4	Students can be able to understand & apply the dry docking routines and inspection on ships
C605.5	Students can be able to remember & understand about the noise and vibration on ships
Course Name: C608 (508116/ Simulator Laboratory)	
CO	COURSE OUTCOMES
C608.1	Students can be able to understand and simulate the main engine
C608.2	Students can be able to explain and trouble shoot the machineries
Course Name: C609 (508116/ MARINE AUXILIARIES –II LABORATORY)	
CO	COURSE OUTCOMES
C609.1	Students can be able to get practical knowledge on overhauling of cylinder head with liner, piston, air stating & cylinder relief valve
C609.2	Students can be able to get practical knowledge on overhauling of fuel pump, fuel injector, air compressor valve, and maintenance on purifier and heat exchangers

PROGRAMME ELECTIVE PAPER - I

Course Name: C606 PE -1 (508201 PRESSURE VESSELS AND PIPING)

CO	COURSE OUTCOMES
C606.1	Classify different types of stresses
C606.2	Understand the various stresses occurring in pressure vessels
C606.3	Design pressure vessels
C606.4	Analyze various fractures in pressure vessels
C606.5	Analyze and design the piping layout

Course Name: C606 PE -2 (508202 Logistics and Supply Management)

CO	COURSE OUTCOMES
C606.1	Explain the scope of logistics in business.
C606.2	Explain logistics and supply chain management
C606.3	Classify logistics and supply chain management
C606.4	Analyze supply chain dynamics and various issues of supply chain performance.
C606.5	Identify about demand forecasting and learn about the various forecasting techniques

Course Name: C606 PE -3 (508203 SHIP SAFETY AND ENVIRONMENTAL PROTECTION)

CO	COURSE OUTCOMES
C606.1	Students can be able to understand and operate the LNG ,LPG ships
C606.2	Students can be able to explain and operate the chemical ships
C606.3	Students can be able to describe and operate the oil tanker ships

C606.4	Students can be able to illustrate and operate the bulk and car carrier
C606.5	Students can be able to apply the management principles in real time
Course Name: C606 PE -4 (508204 MARINE PROPELLERS & PROPULSION)	
CO	COURSE OUTCOMES
C606.1	Students can be able to understand about various propulsion system and its design
C606.2	Students can be able to elaborate about propeller environment and analyze its performance
C606.3	Students can be able to explain about various propeller theories and apply onboard
C606.4	Students can be able to describe about resistance acting on ship and how to evaluate and suppress
C606.5	Students can be able to analyze service performance of ships
Course Name: C606 PE -5 (504207 TOTAL QUALITY MANAGEMENT)	
CO	COURSE OUTCOMES
C606.1	Understand the basics of TQM
C606.2	Describe the principles of TQM
C606.3	Apply the tools and techniques in real time environment
C606.4	Apply the six sigma and QFD in real time environment
C606.5	Elaborate about ISO and QS standards
Course Name: C606 PE -6 (508205 MARINE STRUCTURE AND WELDING)	
CO	COURSE OUTCOMES
C606.1	Understand the various principles of welding
C606.2	Illustrate about metallurgy of welding

C606.3	Distinguish between the usage of different alloy steels
C606.4	Understand the various welding of non-ferrous metals
C606.5	Identify the defects in welded joints

Course Name: C606 PE -7 (508206 ADVANCED MATERIAL SCIENCE)

CO	COURSE OUTCOMES
C606.1	Students can be able to observe various metals & alloys.
C606.2	Students can be able to analyze equilibrium diagram & heat treatment.
C606.3	Students can be able to classify different properties.
C606.4	Students can be able to select material for ship building.
C606.5	Students can be able to identify the various engineering materials & testing.

Course Name: C606 PE -8 (508207 Surface Coating Engineering)

CO	COURSE OUTCOMES
C606.1	Understand the various engineering surfaces corrosion
C606.2	Understand the theory of corrosion
C606.3	Apply knowledge on industrial purpose
C606.4	Apply the knowledge for testing of corrosion levels
C606.5	Apply the knowledge for protection / prevention

Course Name: C606 PE -9 (508208 MARINE TRIBOLOGY)

CO	COURSE OUTCOMES
C606.1	Understand the various engineering surfaces

C606.2	Distinguish the different types of wear
C606.3	Apply various lubricants for materials
C606.4	Explain the application of film lubrication
C606.5	Select materials for bearings

OPEN ELECTIVES

Course Name: OE -1 (508901 INTRODUCTION TO MARINE ENGINEERING)

CO	COURSE OUTCOMES
CO1	Students can be able to understand basic energy resources.
CO2	Students can be able to illustrate working of marine IC engines
CO3	Students can be able to classify various refrigeration and air conditioning systems
CO4	Students can be able to explain the classification of pumps and compressor
CO5	Students can be able to summarize the terms of ships.

Course Name: OE -2 (508902 SHIPPING AND PORT MANAGEMENT)

CO	COURSE OUTCOMES
CO1	Understand about development in shipping
CO2	Describe about different types of ships
CO3	Elaborate about organizational structure of shipping company
CO4	Explain about ship purchase & Demolition
CO5	Illustrate about ports in India

Course Name: OE -3 (508903 INTRODUCTION TO OFFSHORE & HARBOUR ENGINEERING)

CO	COURSE OUTCOMES
CO1	Students can be able to study the offshore floating structures
CO2	Students can be able understand about ocean environments and its properties
CO3	Students can be able to study and analyze various loads on structures
CO4	Students can be able to study about fixed offshore platforms
CO5	Students can be able to study about floating offshore platform
Course Name: C701 (508031 MARITIME ENGLISH)	
CO	COURSE OUTCOMES
C701.1	Extend their knowledge in English vocabulary, grammar, reading skills and speaking skills regarding ship handling
C701.2	Explain their knowledge in English vocabulary, grammar, reading skills and speaking skills regarding emergencies
C701.3	Maximize their knowledge in English vocabulary, grammar, reading skills and speaking skills regarding cargo handling
C701.4	Apply their knowledge in English vocabulary, grammar, reading skills and speaking skills regarding navigation
C701.5	Show their knowledge in English vocabulary, grammar, reading skills and speaking skills regarding metrology
Course Name: C702 (508118 ON BOARD & TRAINING ASSESSMENT)	
CO	COURSE OUTCOMES
C702.1	Students can be able to understand and operate the marine diesel engine and its auxiliaries
C702.2	Students can be able to understand and trouble shoot the machineries
Course Name: C703 (508119 VIVA -VOCE)	
CO	COURSE OUTCOMES
C703.1	Students can be able to explain and demonstrate the various marine engineering practices.
Course Name: C704 (508120 VOYAGE TRIP & REPORT)	

CO	COURSE OUTCOMES
C704.1	Students can be able to adapt to the sea working environment and understand the functioning of various equipments.
Course Name: C801 (508032 IMO & MARITIME CONVENTION)	
CO	COURSE OUTCOMES
C801.1	Students can be able to remember & understand about STCW and all training regulations
C801.2	Students can be able to understand and apply the tanker requirements for officer in charge
C801.3	Students can be able to understand about ship operation & maintenance with flag state control and PSC
C801.4	Students can be able to remember and apply the statutory regulation in maritime industry
C801.5	Students can be able to understand the Knowledge of Various Ship surveys and certificates issued for ship.
Course Name: C802 (508033 STCW & CLASS IV PREPARATION)	
CO	COURSE OUTCOMES
C802.1	Students can be able to remember & understand the watch keeping duties of officers, log book writing & trouble shooting during watch keeping.
C802.2	Students can be able to understand & apply all the troubleshooting in Auxiliary machineries such as purifier, boilers, air compressors etc
C802.3	Students can be able to understand & apply all the troubleshooting in Auxiliary machineries such as R & AC, pumps, deck machinery & turbocharger etc
C802.4	Students can be able to understand & apply knowledge about maintenance of various main engine components
C802.5	Students can be able to understand & apply all the trouble shooting and maintenance of marine electrical machinery
Course Name: C804 (508034 OFFSHORE TECHNOLOGY)	
CO	COURSE OUTCOMES
C804.1	Students can be able to explain the offshore floating structures
C804.2	Students can be able understand about ocean environments and its properties

C804.3	Students can be able to illustrate and analyze various loads on structures
C804.4	Students can be able to elaborate about fixed offshore platforms
C804.5	Students can be able to describe about floating offshore platform
Course Name: C805 (508301 PROJECT WORK)	
CO	COURSE OUTCOMES
C805.1	Students can be able to understand and apply the various theoretical knowledge into practical applications onboard.
PROGRAMME ELECTIVE PAPER - II	
Course Name: C803 PE 1(508209 ENGINE ROOM MANAGEMENT)	
CO	COURSE OUTCOMES
C803.1	Students can be able to understand and operate the Main Engine and other auxiliaries and its function.
C803.2	Students can be able to remember and plan the maintenance schedule for all machineries
C803.3	Students can be able to understand and organize the engine room watch keeping.
C803.4	Students can be able to experiment with the Monitoring devices.
C803.5	Students can be able to identify the deck machinery and spare parts.
Course Name: C803 PE 2(508210 SPECIAL DUTY VESSELS AND TYPE OF OPERATION)	
CO	COURSE OUTCOMES
C803.1	Students can be able to understand about special duty vessels
C803.2	Students can be able to understand the various oil tanker operations
C803.3	Students can be able to understand the various routine operations carry out in tankers
C803.4	Students can be able to understand about various dangerous cargo and its safeties

C803.5	Students can be able to remember and understand the various rules and regulation related to special duty vessels
Course Name: C803 PE 3(508211 ADVANCE MARINE TECHNOLOGY)	
CO	COURSE OUTCOMES
C803.1	Students can be able to understand the components used in LNG ,LPG ships
C803.2	Students can be able to summarize the classification of chemical tankers ships
C803.3	Students can be able to explain oil tanker ships.
C803.4	Students can be able to elaborate bulk and ro-ro vessel
C803.5	Students can be able to illustrate latest technology in engines
Course Name: C803 PE 4(508212 MARINE CORROSION & PREVENTION)	
CO	COURSE OUTCOMES
C803.1	Explain the different types of protection used in ships
C803.2	Elaborate the hull plate preparation
C803.3	Describe the modern paint types used for marine application
C803.4	Illustrate the effects of corrosion and prevention in boilers
C803.5	Explain the different types of corrosion and its prevention
Course Name: C803 PE 5(508213 MARINE ROBOTICS)	
CO	COURSE OUTCOMES
C803.1	Summarize various types of robots
C803.2	Understand the recent developments in robotic sailing
C803.3	Design the remotely operable vehicles

C803.4	Describe the autonomous underwater vehicles and control strategies
C803.5	Model the marine vehicles
Course Name: C803 PE 6(508214 SPECIAL DUTY VESSELS AND TYPE OF OPERATION)	
CO	COURSE OUTCOMES
C803.1	Students can be able to explain about special duty vessels
C803.2	Students can be able to elaborate the various oil tanker operations
C803.3	Students can be able to understand the various routine operations carry out in tankers
C803.4	Students can be able to describe about various dangerous cargo and its safeties
C803.5	Students can be able to understand the various rules and regulations related to special duty vessels
Course Name: C803 PE 7(508215 MARINE DISASTER MANAGEMENT)	
CO	COURSE OUTCOMES
C803.1	Students can be able to understand the basics of disaster.
C803.2	Students can be able to illustrate various disaster approaches.
C803.3	Students can be able to study the interrelationship between disasters and developments.
C803.4	Students can be able to classify the risk managements in India.
C803.5	Students can be able to summarize the assessment and case studies of disaster management.
Course Name: C803 PE 8(508216 ADVANCED MARINE HEAT ENGINES)	
CO	COURSE OUTCOMES
C803.1	Students can be able to explain gas turbine cycles.
C803.2	Students can be able to illustrate combustion of fuels and flame stabilization.

C803.3	Students can be able to classify various compressors
C803.4	Students can be able to design heat exchangers
C803.5	Students can be able to summarize the recent trends in heat engines
Course Name: C803 PE 9(508217 FOUNDATION SKILLS IN INTEGRATED PRODUCT DEVELOPMENT)	
CO	COURSE OUTCOMES
C803.1	Define and formulate a problem
C803.2	Solve specific problems using system design
C803.3	Design new products and develop using various subsystems
C803.4	Apply knowledge of EOL in product management
C803.5	Develop a product in industries