

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. SEMESTER: V
MARINE ENGINEERING

Subject Name: **Basic Marine Machinery (Institute Elective-II)**
Subject Code: **151806**

Teaching Scheme				Evaluation Scheme		
Theory	Tutorial	Practical	Total	University Exam (Theory) (E)	Mid Sem Exam (Theory) (M)	Practical (I)
4	0	2	6	70	30	50

Sr. No.	Course Content
1.	<p>Engine Room Layout:</p> <p>Lay out of main and auxiliary machinery in engine rooms in different ships. Piping arrangement for steam, bilge, ballast and oil fuel systems, Lubricating oil and cooling system with various fittings.</p>
2.	<p>Propulsion shafting System:</p> <p>Intermediate and tail shaft, propeller fitting arrangement, thrust block, shaft bearings, stern tube and water and oil lubricated stern gland, shaft alignment.</p>
3.	<p>Fresh water system:</p> <p>Fresh water system for cooling main engine and auxiliaries; boiler feed water system; fresh water system for domestic use, hydrophore tanks; fresh water generator.</p>
4.	<p>Sea water system:</p> <p>Sea water system for cooling main auxiliary engines and fresh water, sea chests; ballast water system and ship service system – pumps and piping, rule requirement.</p>
5.	<p>Pumps:</p> <p>Types of pumps for various requirements, their characteristics and application in ships; Centrifugal, Gear Pumps; Screw pumps and Reciprocating pumps; Care and Maintenance of pumps.</p>

6.	<p>Evaporators:</p> <p>Construction and Operation of different types of evaporators; Fresh Water generators; Fresh Water generators and distillers; Conditioning arrangements of distilled water for drinking purpose; Care Maintenance of pumps of various types.</p>
7.	<p>Deck Machinery:</p> <p>Various types of deck machinery used in ships e.g. Winches, and Wind lass, their requirements; Operations and maintenance. Deck Cranes.</p>
8.	<p>Filters:</p> <p>Strainers and filters, types of marine filters, auto-cleaner and Duplex filters; Static filters; Priming and core maintenance of filters.</p>
9.	<p>Heat Exchangers</p> <p>Tubular and plate type; reasons of corrosion, tube removal, plugging, and materials used.</p>

Reference Books:

1. Marine Auxiliary Machinery-7e, H.D. McGeorge; Butterworth Heinemann Publications, New York, ISBN13: 978-0-7508-4398-6
2. Introduction to Marine Engineering-2e by D.A, Taylor, Butterworth Heinemann Publications, New York, SBN10: 0750625309
3. Basic Mechanical Engineering by Duraivelu. K., Richard. S., 2nd Edition, DeaR Publication, Chennai, 2001
4. Basic Mechanical Engineering-4e by K. Venugopal, Anuradha Agencies, Chennai, Year 1994