

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

MARINE ENGINEERING

Subject Name: **MARINE ELECTRICAL TECHNOLOGY AND
ELECTRICAL MEASUREMENT**

Sr. No.	Course Contents	Total Hrs
1.	Essential equipment and special circuits: Classification society's requirements for electrical equipment for steering gears, electrical control from wheel house for electro-hydraulic steering gear, all electrical steering gear circuit and control equipment, navigation lights.	07
2.	Miscellaneous marine equipment and alarm system: electrical engine room telegraph, remote indicating revolution counter, remote helm indicator, salinity indicators, mist detectors, carbon di-oxide recorder, electrical equipment for water tight door operation, centralized alarm system in machinery space, for the above, fire alarm system for engine room, holds and accommodation, high temperature alarms low and high level alarm.	10
3.	Electric propulsion: systems, difference and relative merits, alternating current, diesel electric and turbo electric propulsion system engines, generators, motors, excitation system and control.	08
4.	Maintenance of electrical equipment Detection of faults and repair, preventive maintenance and periodic survey of equipment. Classification societies requirements for spares on board.	06
5.	Basic requirements of a measuring instrument Deflection, control and damping devices moving coil, moving iron, dynamometer and thermocouple type of ammeter, voltmeter and wattmeter-their construction and other details, extension of scales of a meter.	06
6.	Single phase and three phase measurements by wattmeter. Measurement of energy. Measurement of speed, frequency and phase difference. Measurement of resistance, inductance and capacitance by Bridge Method. Magnetic measurement. Localization of cable faults. Transducers and its application in the measurement of pressure, flow, temperature etc. Simple electronics measuring devices, such as VTVM, CRO, IC tester, signal generator.	08

Text Books:

1. BOWIC C.T., Marine Electrical Practice, 5th Edition, "Butter Worth", London, 1981.
2. LAW S.W., "Electricity applied to Marine Engineering", 4th Edition, "The Institute of Marine Engineers", London, 1998.
3. Electrical measurement and measuring Instruments By Suryanarayana Striling Book House.
4. Hand book of electrical Engineering By S..L Bhatia Stirling Book Hose

References:

1. Elstan.A. Fernandez., "Marine Electrical Technology", 1st Edition, "Sterling Book House", Mumbai, 2002.