

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

MARINE ENGINEERING

Subject Name: **SHIP SAFETY, ENVIRONMENTAL PROTECTION AND
SAFE WATCH KEEPING II**

Sr. No.	Course Contents	Total Hrs
1.	Legislation (i) National & International legislation. (ii) IMO & Conventions (iii) Indian Merchant Shipping Acts & Rules. (iv) Classification societies. (v) Statutory survey & Certification (vi) Port State control & flag state inspection (vii) ISM, SMC & ISO Codes.	04
2.	Prevention of pollution of Marine Environment: (i) While bunkering, loading & discharging oil cargo, tank cleaning, pumping out bilges. (ii) Knowledge of construction and operation of oil pollution prevention equipment in Engine room & on tankers. (iii) MARPOL 73/78 and other national legislations like OPA-90. (iv) MARPOL equipments like ODMCS, OWS, incriminators etc. (v) Oil record book and sopep manual.	04
3.	Standards of Training, certification & Watch-keeping for sea farers: International Conference of 1978. Basic Principles to be observed in keeping an engineering watch. Criteria for composing the engine room watch. Operation & Watch requirements. Fitness for duty. Protection for marine environment. Requirement for certification; minimum knowledge requirement for certification-theoretical, practical; duties & responsibilities concerning safety & protection of environment. Requirements for watch keeping duties. Physical training & experience in watch-keeping routine; Main and aux, machines, pumping systems, Generating plant, Safety and emergency procedures. First aid.	04
4.	Minimum requirement for Ratings of Engine Room watch: Special requirement for engineer officer for Oil Tankers, Chemical Tankers and Gas Tankers. Details of operational guidance for In-charge of an engineering watch.	04
5.	Engineering watch (underway): General, Taking over watch, Periodic checks of machinery, Engine Room Log, Preventive repair and maintenance; Bridge notification. Navigation in congested water and during restricted visibility, calling the attention of the Chief Engineer Officer, Watch keeping personnel.	04
6.	Engineering Watch (Unsheltered anchorage): Conditions to be ensured. Watchkeeping (in Port)- Watch arrangements; Taking over the watch; Keeping a watch. Oil, Chemical & Gas Tankers-Principles, characteristics of Cargo; Toxicity hazards; Safety equipments; Protection of Personnels; Pollutions.	05
7.	Shipboard Applications: Regulations & Codes of Practice; Ship design & equipment of oil, chemical & Gas Tankers; ship Operation, repair & maintenance; emergency Operations; training of other personnels. Requirement of continued up-dating of proficiency. Modifications of STCW vide june'95 Conference.	05

Text Books:

1. Loss Control Auditing: A Guide for Conducting Fire, Safety, and Security Audits by E. Scott Dunlap Stirling Book House
2. Safety & Security at Sea: A Guide to Safer Voyages Details by D.S. Bist ,Stirling Book House
3. Vikram Gokhale & N.Nanda,” Marine Engineering Practice and Ship safety and Environmental protection”, 3rd Edition, Engee Enterprises Mumbai, 2002.
4. IME Manuals and Ship’s Marine Manuals.

Reference Book:

1. Peril at Sea & Salvage: A Guide for Masters, 5/E, 1998 Details by International Chambers of Shipping ,Stirling Book House
2. Accident & Loss Prevention at Sea: International Conference & Workshops by L. A. Holder, Stirling Book House
3. Annex VI Regulation for the Prevention of Air Pollution from Ships & NOxTechnical Code 2008, (Revised Marpol) 2009/Ed by SBH ,Stirling Book House
4. Bhandarkar V.K. “MS & M Notices”, 1st Edition, Bhandarkar Publishers, Mumbai, 1998.
5. International Maritime Organisation, “SOLAS consolidated Edition 1997”, 2nd Edition, Sterling Book House, Mumbai, 1997.
6. International Maritime Organisation, “MARPOL 73/78 consolidated edition 1997”, 2nd Edition, terling Book House, Mumbai, 1997.
7. R. H. B. Sturt, “The Collision Regulations”, 2nd Edition, Lloyd’s of London Press Ltd., London, 1984.