

**VELS INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES**  
**SCHOOL OF MARITIME STUDIES**  
**PRESEA TRAINING FOR DIPLOMA HOLDERS (DME) – SYLLABUS**  
**(24 Months Shore Based Training)**

**Classroom Training**

The syllabus for these subjects is developed by the Directorate General of Shipping, Govt. of India based on the competency.

The names of subjects are:

1. **English:** Use of grammar, letter composing, reference to context etc.
2. **Applied Mechanics:** Study of basic mechanical principles involved in operations of various mechanical devices.
3. **Thermodynamics and Heat Engine:** Study of refrigeration cycle, air-conditioning, heat transfer etc.
4. **Mathematics:** Study of calculus, algebra, statics etc.
5. **Engineering Knowledge Motor:** This subject includes the construction and composition of parts of main propulsion machinery which is a slow speed large marine diesel engine. The subject also covers medium speed generator engines.
6. **Engineering Knowledge General:** This subject covers all the auxiliary support machinery located in the engine room for the operation of the main propulsion engine. These machineries are air compressors, refrigeration and air conditioning compressors, purifiers, pumps pipelines and valves, heat exchangers etc. This subject also covers all the machineries fitted on the deck of ship like anchor windlass, mooring winch, hatch cover opening and closing arrangements, decks cranes etc.
7. **Marine Engineering Practices:** This subject covers the operation and maintenance procedures of all the machines on board a ship.
8. **Ship Safety and Environmental Protection:** This subject teaches about all the mandatory rules and regulations required to be followed in a ship. Some of the important rules taught are Safety at Life at Sea, Marine Pollution, international Ships and Ports Security Code etc.
9. **Naval Architecture and Ship Construction:** This subject teaches about the construction details of a ship and mathematical principles involved in Naval Architecture.

10. **Electro-Technology:** This subject teaches about all the basic principles of electricity, electronics, automation etc. Construction and operation of electrical and electronic equipment required on-board a ship is also covered.
11. **Management:** Basic principles managing a ship, team work between different departments etc. are covered in this subject.
12. **Marine Engineering Drawing:** This subject teaches interpretation of Marine Equipment drawing, isometric view, dismantled view of machine parts etc.

### **Workshop Training**

During the workshop training candidates are taught to complete a number of practical assignments in the various shops like:

1. **Fitting Shop:** Here the use of hand tools taught for carrying at fitting shop.
2. **Machine Shop:** Here the use of lathe machine is taught.
3. **Welding shop:** Here assignments involve the usage of electric arc welding as well as oxy-acetylene gas welding, brazing etc.