

AMSB23 SHIP DESIGN

UNIT-1 INTRODUCTION

- 1.1 General aspects of Marine Activities, Transportation of cargoes, Marine services & Operations, Marine Industries;
- 1.2 Engineering Economics in Ship Design – Economic criteria, Initial cost, Operating cost, RFR; Owners requirements

UNIT-2 METHODS OF SHIP DESIGN

- 2.1 Design using basic type ships, Design using coefficients, Design using iteration methods; design spiral; design categories (dead-weight carrier, capacity carrier, linear dimension ship).
- 2.2 Ship parameters – displacement, displacement coefficient, displacement equation, volume equation, solution of the cubic equation

UNIT-3 SHIP DIMENSION

- 3.1 Length, breadth, depth, draught, form coefficients;
- 3.2 Shape of the hull Mass estimation - lightship mass – steel mass, outfit mass, engine plant mass; dead weight.
- 3.3 Design of hull form – conventional method of lines, distortion of existing forms; stem and stern contours, Bulbous Bow.

UNIT-4 GENERAL ARRANGEMENT

- 4.1 Subdivision of the ship's hull and erections, arrangement of spaces, arrangement of tanks, superstructure and deckhouses, arrangement of engine plants,
- 4.2 Cargo handling capacity Hold capacity and stowage factor.

UNIT-5 EFFECT OF FROM ON SHIP'S PERFORMANCE

- 5.1 Freeboard and load line regulation; Stability- stability booklet, IMO Regulations, Checks on stability, trim.
- 5.2 Watertight integrity; damage stability, Tonnage measurement – international, Suez, Panama. Behaviour of ships in sea.
- 5.3 Resistance, Powering, Propulsion

Reference Books:

1. Lewis, E.U; 'Principles of Naval Architecture' (2 nd Rev.) Vol. III, 1989, SNAME New York
2. Schneekluth, H; Ship Design for Efficiency and Economy, Butterworths, 1987
3. Taggart; Ship Design and Construction, SNAME, 1980.