

# GUJARAT TECHNOLOGICAL UNIVERSITY

## MARINE ENGINEERING

### B. E. SEMESTER: VII

Subject Name: **Naval Architecture- I**

Subject Code: **171806**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam (E)		Mid Sem Exam (Theory) (M)	Practical (Internal)
				Theory	Practical		
3	0	0	3	70	0	30	50

Sr. No	Course Content	Total Hrs.
1.	<b>Geometry of ship &amp; hydrostatic calculation :</b>  Ships lines, Displacement Calculation, First and Second moment of area, Simpsons rules, application to area and volume, Trapezoidal rule, mean and mid-ordinate rule, Tchebycheff's rule and their applications, Tonnes per Cm. Immersion. Coefficient of form, Wetted surface area, Similar figures. Centre of gravity, effect of addition and removal of masses, Effect of suspended mass.	15
2.	<b>Transverse Stability of Ships:</b>  Statical stability at small angles of heel, Calculation of B.M. Metacentric, Inclining experiment, Free surface effect, stability at large angles of heel, curves of statical stability, dynamical stability, angle of loll; stability of a wall sided ship.	15
3.	<b>Resistance &amp; Power :</b>  Frictional, Residuary & Total resistance, Froude's Law of comparison, Effective power calculations, Ships correlation Factor (SCF), Admiralty co-efficient, Fuel Coefficient and Fuel consumption. Effect of viscosity and application of ITTC formula.	15

#### Text Books:

1. Ship and Naval Architecture By Munro Smith Stirling Book House
2. Introduction To Naval Architecture: Formerly Muckle's Naval Architecture For Marine Engineers by E. C. Tupper Publisher: Butterworth-heinemann (Dec 2004)

#### Reference book:

1. Merchant Ship Naval Architecture Details by DR DA Taylor, DR Alan ST Tang Stirling Book House