SUBJECT NO-NA21001, SUBJECT NAME- MARINE HYDRODYNAMICS

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Prerequisite: NoneRecapitulation of motion of a viscous fluid: conservation of mass and momentum, transport theorem, Eulers equations, NS equations. Motion of an ideal fluid; irrotational flow, Bernoullis eqn, simple potential flow. Sources and sinks. Complex potential and conformal mapping. Fixed bodies and moving bodies. Greens theorem and distribution of singularities. Forces on a moving body in unbounded fluid: added mass. Lifting surfaces: lift and drag on aerofoils. Kutta Joukowski Theorem. Surface gravity waves: free-surface conditions, plane progressive waves. Wave oscillation in closed and open basins, Waves generated by a moving body. Basics of various classes of free-surface marine hydrodynamic problems: steady motion, wave-effects on marine structures.