

SYLLABUS :-

Physical description of wave evolution â wave growth by wind theories, wave spectrum, effects of small scale disturbances, gustiness on wave growth, wave induced stress, air-flow drag over sea surface; Wave-wave interaction â general formalism, wave dissipation by surface processes; Bottom friction and percolation â dissipation over sandy bottoms, parameterization of bottom stresses; Numerical modeling â model classes and generation, wave sensitivity studies, operational application and analysis; Extreme events - storm surges, tsunami and cyclones; Basics of Ocean Circulation -governing equations, geotropic flows, principles of vorticity dynamics, upwelling, baroclinic and barotropic instability with applications; Theory of fronts and jets â gulf stream, equatorial dynamics and ocean currents, large scale ocean circulation, numerical models, wind driven circulation in homogenous oceans, ENSO â Elnino-Southern Oscillation, Princeton Ocean Model and some of its applications