

Level and Major: Graduate - Marine & Coastal Engineering

Course Title: fundamentals of marine hydrodynamic

Number of Credits: 3

Prerequisite (Corequisite): Structural analysis (I), Concrete Technology Lecturer: -

Course Topic

- Classification of blue waves
- The theory of short linear waves(extraction of governing equations and their simplification method- analytical solution of simplified governing equations-extracting the governing relations on wave engineering properties
- Basic of short wave propagation(recognition of processes involved in short wave propagation-calculation of wave properties under the influence of changing the natural depth of the bed and marine structures
- Phenomena of short wave propagation (refraction, guttation , reflection ,transit)
- Familiarity with finit range wave theories
- Determining the properties of irregular waves ,time series, statistical methods spectral methods
- the formation and production of waves by wind(describing the basics of parametric methods based on spectrul analysis –expressing the equations governing the formation of waves caused by wind
- The theory of long waves(the governing equations and their simplification- calculating the properties of long waves in one- dimensional diffusion in water ways-recognition of long wave formation mechanisms
- Phenomena of long waves(tide ,fluctuations, crasters ,tsunami)
- Wave and flow interaction

Course Description:

Reading Sources:

Course Goals and objectives:

Evaluation:

Course topics:

The course aims to: