

**Course Number: 28961**  
**Course Name: Wave Theory**

Course Type: Theory
Prerequisite: Fluid Mechanics II
Level: Graduate
Group: Marine Engineering

Type & Max Unit: 3
Corequisite: Nothing
First Presentation: 1987-1
Last Edition: 2017

**Objectives:**

The main goal of this course is to present the principles of wave theory and its application on ocean and marine engineering. This course will concentrate mostly on linear and near-non linear waves.

**Topics:**

- Basic oceanography
- A review of hydrodynamics and vector Analyses
- Category of waves and their properties
- A review of application of numerical techniques to solve related wave theory problems
- Wave refraction and its application
- Wave diffraction and its application
- Wave forces on structures
- Wind Forces on structures

**References:**

1. M . Abbaspour “Wave Theory and its Application in Ocean Engineering” , Published by Sharif university of Technology
2. J. Myers. Etall, “Handbook of Ocean and underwater Engineering., N.Y, Published by McGraw-Hill (1969)
3. R.G Dean “Water Wave Mechanics for Engineers and Scientists” 2<sup>nd</sup> edition, World Scientific, publishing, USA.
4. C.C Mei “Theory and Applications of Ocean Surface Waves” World Scientific, publishing, CO, USA.