

(B) Course information in english

General course information:

Course title:	Wave mechanics and Offshore Structures	Course code:	CE09_H02
Credits:	5	Work load (hours):	120
Course level:	Undergraduate <input checked="" type="checkbox"/>	Graduate <input type="checkbox"/>	
Course type:	Mandatory <input type="checkbox"/>	Selective <input checked="" type="checkbox"/>	
Course category:	Basic <input type="checkbox"/>	Orientation <input checked="" type="checkbox"/>	
Semester:	9 th	Hours per week:	4
Course objectives (capabilities pursued and learning results):			
Marine hydraulics and wave theory. Nonlinear waves. Unsteady and directional waves. Extreme waves and design wave. Stochastic analysis. Wave loads on platforms and offshore structures.			
Prerequisites:			
Fluid Mechanics and Wave Mechanics & Harbour Works			

Instructor's data:

Name:	Vasiliki Katsardi
Level:	Lecturer
Office:	113A
Tel. – email:	24210 7 4167 – vkatsardi@civ.uth.gr
Other tutors:	-

Specific course information:

Week No.	Course contents	Hours	
		Course attendance	Preparation
1	Introduction and presentation of the course	4	0
2	Linear Wave Theory	4	3
3	Wave kinematics	4	3
4	Wave forces – Morison equations	4	3
5	Loads on structures	4	3
6	Loads on structures	4	3
7	Real waves and predictions – SBM method	4	3
8	Nonlinear wave theories	4	3
9	Nonlinear wave solutions	4	3
10	Unsteady Waves	4	3
11	Directional Waves	4	3
12	Unsteady and Nonlinear Waves	4	3
13	Nonlinear and fully nonlinear wave models	4	3
14	Revision	4	0

Additional hours for:			
Class project	Examinations	Preparation for examinations	Educational visit
30	0	0	-

Suggested literature:

- Κουτίτας, Κ., «Εισαγωγή στην Παράκτια Τεχνική και τα Λιμενικά Έργα», ISBN 960-431-289-8, Θεσσαλονίκη: Εκδόσεις Ζήτη, 1998
- Ματσούκης, Π.Φ., «Θαλάσσια Υδραυλική», ΔΠΘ, Ξάνθη, 1995
- Massel, S. R. "Ocean Surface Waves: Their physics and prediction", World Scientific, 1996
- Dean R.G. & Dalrymple R.A., "Water Wave Mechanics for Engineers and Scientistis", World Scientific, 1984
- Mei, C.C., "The applied Dynamics of Ocean Surface Waves", Advanced Series on Ocean Engineering - Volume 1, ISBN 9971-50-789-7, World Scientific, 1989

Teaching method (select and describe if necessary - weight):

Teaching	<input checked="" type="checkbox"/>	65%
Seminars	<input type="checkbox"/>	
Demonstrations	<input checked="" type="checkbox"/>	5%
Laboratory	<input type="checkbox"/>%
Exercises	<input checked="" type="checkbox"/>	30%
Visits at facilities	<input type="checkbox"/>%
Other (describe):	<input type="checkbox"/>%
Total		100%

Evaluation method (select)- weight:

	<i>written</i>	%	<i>Oral</i>	%
Homework	<input checked="" type="checkbox"/>	5%	<input checked="" type="checkbox"/>	5%
Class project	<input checked="" type="checkbox"/>	90%	<input type="checkbox"/>	
Interim examination	<input type="checkbox"/>		<input type="checkbox"/>	
Final examinations	<input type="checkbox"/>	-	<input type="checkbox"/>	
Other (describe):	<input type="checkbox"/>		<input type="checkbox"/>	