

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Engineering		
ACADEMIC UNIT	Department of Naval Architecture		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	NAOME1351	SEMESTER	8 th
COURSE TITLE	FLOATING OFFSHORE STRUCTURES		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS (ECTS)
Lectures		5	6
COURSE TYPE <i>general background, specialbackground, specialised, general knowledge, skills development</i>	Specialized		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSEWEBSITE(URL)	https://eclass.uniwa.gr/courses/NA191/		

(2) COURSE GOALS / LEARNING OUTCOMES

The aim of the course is to familiarize the students with :

- The description of the wave environment
- The evaluation of wave loading in real fluids

with particular emphasis to special geometric configurations used in offshore applications.

(3) COURSE CONTENT / SYLLABUS

Lectures:

- Types of offshore structures (jackup, semisubmersible, Tension Leg Platforms, ect)
- Description of the wave environment (wave, wind, current)
- Wave theories
- Evaluation of wave loading on slender marine structures in real fluids (Morison Type Loading)
- Evaluation of the wave loading and motions of large-volume structures
- Evaluation of wave loading and motions
- Hydrodynamic mass
- Results for typical offshore structures
- Applications

Laboratory:

Free - fixed floating offshore structures experiments (wave run up, motions, etc.).

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	<ul style="list-style-type: none"> Support learning through the electronic e-class platform. 	
TEACHING METHODS <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc. The student's study hours for each learning activity are given as well as the hours of non- directed study according to the principles of the ECTS</i>	Activity	Workload (hours)
	Lectures	52
	Laboratory exercises	13
	Homework assignments	39
	Study of Lectures	52
	Course total	156
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i>	Lectures: Written examination (80%) Laboratory: Laboratory exercises (20%).	

(5) ATTACHED BIBLIOGRAPHY

1. O.M. Faltinsen, "Sea Loads on Ships and Offshore Structures", Cambridge University Press, Cambridge Ocean Technology Series, Cambridge, New York, 1990
2. J.N. Newman, "Marine Hydrodynamics", MIT Press, Cambridge, Mass., 1977
3. T. Sarpkaya, "Wave Forces on Offshore Structures", Cambridge University Press, New York, 2010
4. Journee and Massie, "Offshore Hydromechanics", Delft University of Technology, 2001.
5. Elements of Ocean Engineering, Robert Randall, 2010, ISBN: 978-0-939773-77-0 Greek Section of the Society of Naval Architects & Marine Engineers.
6. Mazarakos T. P. 2014. "Special Marine Constructions & Sailing Vessels", offshore structure experiments, Athens, 2014.