

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Engineering		
ACADEMIC UNIT	Department of Naval Architecture		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	NAOME1335	SEMESTER	6 TH
COURSE TITLE	STATIC ANALYSIS OF MARINE STRUCTURES		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS (ECTS)
Lectures		4	5
COURSE TYPE <i>general background, specialbackground, specialised general knowledge, skills development</i>	Specialized		
PREREQUISITE COURSES:	NAOME1103 - Mechanics I and NAOME1211 - Mechanics II		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSEWEBSITE(URL)	https://eclass.uniwa.gr/courses/NA205/		

(2) COURSE GOALS / LEARNING OUTCOMES

<p>The course objective is the familiarization of the attendee with the solution of several static structural problems encountered during the design of the hull.</p> <p>In the context of this course several topics from the field of Structural analysis of hull structures are examined, including the following:</p> <ul style="list-style-type: none"> ➤ Buckling of columns and beams ➤ Bending of unreinforced and reinforced plates ➤ Buckling of plates ➤ Bending of composite beams ➤ Plastic analysis of beams

(3) COURSE CONTENT / SYLLABUS

1. Basic principles of Mechanics – Structural failure criteria
2. Structural design of ship structures
3. Elastic buckling of beams and columns
4. Bending of unreinforced plates
5. Bending of rectangular reinforced plates
6. Buckling of plates
7. Implementation of buckling requirements of IACS standard S11
8. Bending of composite beams
9. Plastic analysis of beams
10. Introduction to Finite Elements

(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"> • Training material is distributed in electronic format • Use of the code ANSYS Workbench 	
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
	Homework assignments	39
	Personal study	52
	Course total	143
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>	Weight of final exams: 60% Weight of exercises: 40%	

(5) ATTACHED BIBLIOGRAPHY

<p>Books</p> <ul style="list-style-type: none"> • J. Eyres, "Ship Construction", Butterworth-Heinemann, 5th Ed., 2001 • Tupper, "Introduction to Naval Architecture", Butterworth-Heinemann, 3rd Ed., 2002

- Owen Hughes & J.K. Paik, “Ship Structural Analysis and Design”

Indicative Journals

- Marine structures, ELSEVIER
- Journal of Ship Research, SNAME
- Marine Technology, SNAME