

COURSE OUTLINE

1. GENERAL

FACULTY	AGRICULTURAL PRODUCTION, INFRASTRUCTURE AND ENVIRONMENT		
SECTION	UTILIZATION OF NATURAL RESOURCES & AGRICULTURAL ENGINEERING		
LEVEL OF STUDY			
COURSE CODE	59	SEMESTER OF STUDY	7Th
COURSE TITLE	DESIGN OF STEEL STRUCTURES		
INDEPENDENT TEACHING ACTIVITIES <i>in case credits are awarded in distinct parts of the course e.g. Lectures, Laboratory Exercises etc. If the credits are awarded uniformly for the entire course, indicate the weekly teaching hours and the total of credits</i>		WEEKLY TEACHING HOURS	CREDITS
LECTURES		4	4
TUTORIAL EXERCISES		Built-in in lectures	
<i>Add rows if needed. Teaching organization and didactics Methods used are described in detail in 4.</i>			
COURSE TYPE <i>background, general knowledge, scientific area, development Skill</i>	SCIENTIFIC AREA		
PREREQUISITE COURSES :	<ul style="list-style-type: none"> • MATERIAL STRENGTH 		
LANGUAGE OF INSTRUCTION and EXAMINATION:	GREEK		
THE COURSE IS OFFERED IN ERASMUS STUDENTS	YES USING A TEXTBOOK IN ENGLISH		
WEBSITE COURSE (URL)			

2. LEARNING OUTCOMES

<p>Learning Outcomes</p> <p><i>The learning outcomes of the course are described, the specific knowledge, skills and competences appropriate level that students will acquire upon successful completion of the course.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • Description of the Level of Learning Outcomes for each cycle of study according to the Qualifications Framework of the European Higher Education Area • Descriptors of Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning <p><i>and Appendix B</i></p> <ul style="list-style-type: none"> • Learning Outcomes Writing Summary Guide
<p>Students, upon successful completion of the course, will be able to:</p> <ul style="list-style-type: none"> ▪ Understand the characteristics, stress behavior of deformations, and mechanical properties of the various grades of structural steel used in structural members and connections in relation to EN standards and Eurocode 3 ▪ Understand the provisions of Eurocode 1 for actions ▪ Understand the provisions of Eurocode 3 for tensile members and design steel tensile structural members ▪ Understand the provisions of Eurocode 3 for bending beams and design steel beams under bending and shear ▪ Understand the provisions of Eurocode 3 for connections and design threaded and welded connections ▪ Understand the provisions of Eurocode 3 for members under axial load and design columns for flexural buckling due to axial compressive load and torsional buckling

Taking into account the general competencies that the graduate must have acquired (as listed in the Diploma Supplement and listed below), which of them does the course aim at?.

Search, analyze and synthesize data and information, using the necessary technologies
Adapting to new situations
Decision making
Autonomous work
Teamwork
Working in an international environment
Working in an interdisciplinary environment
Generating new research ideas

Project planning and management
Respect for diversity and multiculturalism
Respect for the natural environment
Demonstrate social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Promoting free, creative and inductive thinking

Αναζήτηση, ανάλυση και σύνθεση βιβλιογραφικών δεδομένων και πληροφοριών από τους Ευρωκώδικες, με τη χρήση και των απαραίτητων τεχνολογιών
Επίλυση αυτόνομων εργασιών για το σπίτι
Ομαδική εργασία επίλυσης προβλημάτων στην αίθουσα
Σχεδιασμός μελών μεταλλικών κατασκευών
Προαγωγή της ελεύθερης, δημιουργικής και επαγωγικής σκέψης μέσω της συστηματικής εφαρμογής των διατάξεων του Ευρωκώδικα 3 με την βοήθεια των γνώσεων στατικής και αντοχής υλικών για σωστό σχεδιασμό όσον αφορά στην ασφάλεια, λειτουργικότητα και την οικονομία μεταλλικών κατασκευών

3. COURSE CONTENT

- Μεταλλικές κατασκευές (γενικά για δομικά μέλη από χάλυβα, δομικοί χάλυβες, συμπεριφορά τάσεων παραμορφώσεων, πρότυπα, Ευρωκώδικας 3)
- Διατάξεις του Ευρωκώδικα 1 για δράσεις σε κατασκευές
- Μέλη σε εφελκυσμό (οριακή κατάσταση αντοχής σαν κριτήριο σχεδιασμού, καθαρή και ενεργός διατομή)
- Σχεδιασμός συνδέσεων (συνδέσεις και μέσα συνδέσεων, κοχλιωτές συνδέσεις, συγκολλητές συνδέσεις)
- Κάμψη δοκών (σχεδιασμός με την οριακή αντοχή σαν κριτήριο σχεδιασμού, βέλη κάμψης, διάτμηση)
- Σχεδιασμός υποστυλωμάτων (Καμππικός λυγισμός λόγω αξονικού θλιπτικού φορτίου, ισοδύναμα μ μελών σε θλίψη, στρεπτοκαμππικός λυγισμός).

4. TEACHING AND LEARNING METHODS - ASSESSMENT

DELIVERY METHOD <i>Face-to-face, Remote education, etc.</i>	Face to face	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES <i>Use of ICT in Teaching, Laboratory Training, Communication with students</i>	✓ Use of ICT in Teaching and Communication with students	
TEACHING ORGANIZATION <i>The method and methods of teaching are described in detail. Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliography Study & Analysis, Tutorial, Internship (Placement), Clinical Practicing, Art Workshop, Interactive Teaching, Educational visits, Project Writing, Writing a project / assignments, Artistic creation, etc.</i> <i>The student's study hours for each learning activity are listed as well as the hours of unguided study so that the</i>	Activity	Semester Workload
	Lectures	80
	Tutorial – integrated exercise solutions in lectures	20

Total workload at level		
semester to correspond to the standards of ECTS	TOTAL	100
<p align="center">STUDENT EVALUATION</p> <p><i>Description of the evaluation process</i></p> <p>Assessment Language, Assessment Methods, Formative or Summative, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay/ Report, Oral Examination, Public Presentation, Laboratory Work, Clinical Examination of a Patient, Artistic Interpretation, Other / Others</p> <p><i>Explicitly defined evaluation criteria and whether and where they are accessible to students are mentioned.</i></p>	<ul style="list-style-type: none"> • Course attendance - Class participation • Weekly assignments, problems to solve at home • Progress (30%) • Final exam of the entire syllabus (70-100%) that will be used for the overall evaluation of students in combination with the results of progress and participation 	

5. RECOMMENDED-BIBLIOGRAPHY

-Προτεινόμενη Βιβλιογραφία :

-Συναφή επιστημονικά περιοδικά:

- Σχεδιασμός Δομικών Έργων από Χάλυβα, Ι. Βάγιας, Ι. Ερμόπουλος και Γ. Ιωαννίδης Εκδόσεις Κλειδάριθμος. ISBN 960-209-872-4 ΑΘΗΝΑ 13899
- Κατασκευές από Χάλυβα (αρχές Σχεδιασμού στο Πλαίσιο του Ευρωκώδικα 3) Χαράλαμπος Κ. Μπανιωτόπουλος Εκδόσεις Ζήτη ISBN: 978-960-456-184-7 2009 ΘΕΣ/ΝΙΚΗ 11063