

COURSE OUTLINE

NEW WOOD CONSTRUCTION TECHNIQUES

(1) GENERAL

SCHOOL	TECHNOLOGY		
DEPARTMENT	FORESTRY, WOOD SCIENCES & DESIGN		
LEVEL	POSTGRADUATE		
COURSE CODE	M125	SEMESTER	2 nd
COURSE TITLE	NEW WOOD CONSTRUCTION TECHNIQUES		
ACTIVITIES		WEEKLY HOURS	ECTS
Lectures		2	6
TOTAL		2	6
TYPE OF COURSE	MANDATORY OF TECHNOLOGY AND MANUFACTURING EXPERTISE, ELECTIVE OF SPECIALTIES PRODUCT DESIGN & MANAGEMENT AND MARKETING		
PREREQUISITES:	NO		
LANGUAGE OF TEACHING AND EXAMINATION	GREEK		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	NO		
WEBPAGES COURSE (URL)	https://eclass.uth.gr/courses/FWSD_P_123/		

(2) LEARNING OUTCOMES

Learning Outcomes
<p>The purpose of the course is to deepen the subject of modern wooden constructions (mainly structural). Modern construction trends and new products used today are presented and analyzed, combined with those of the design and technology of these products, the requirements are understood and modern specifications are applied, so that the trainees are able to design or produce products covering legislative and construction requirements.</p> <p>Upon successful completion of the course, the student will be able to:</p> <ul style="list-style-type: none"> • To know the basic requirements of a construction in terms of properties of timber and wood-based products. • Know and use correctly all modern wood products that can be used in wooden constructions • To know the basic requirements of the Legislation regarding wood products used in wooden constructions, the procedure for harmonization with European Legislation and the placement of the relevant Marking (CE marking). • To be able to intervene correctly in cases of restoration of wooden structures • To know and correctly make the connections in wooden constructions, with modern materials.
General Skills

(3) COURSE CONTENT

<p>In the theoretical part of the course the student is taught and learns about:</p> <ul style="list-style-type: none"> • The moisture in the wood, its importance in the performance and longevity of the wooden construction. Calculation of the required equilibrium moisture with traditional and new methods. • The traditional and modern applications and technologies of wooden (structural) constructions, both in internal and external constructions. • The new wood-based products offered for use in structural constructions (CLT, metal bars, Glued in Rods, waterproofing membranes, etc.).
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- The modern requirements of the Legislation, EN Standards, Eurocode 5, CE Marking.
- The behavior of wood in fire and the methods of protecting a structure from fire.
- The modern trends in the construction of wooden houses (log houses, Timber frame houses, Timber truss frames, CLT buildings, etc.)
- The energy efficiency of wooden houses, roofs, attics.
- The modern trends in the manufacture of wooden frames (German frames), the required modern technology, the protection of the frames.
- The modern trends in the construction of wooden floors, types of floors, methods of application, quality controls on floors, the application of the CE Marking on the frame.
- The modern trends in the construction of outdoor wooden structures. Peculiarities and additional protection requirements, in relation to interior constructions.
- Modern trends in strengthening existing wood-based structures to protect and restore older wooden structures.

From the 1st lesson, a suggested list of tasks is given that the student should undertake and prepare (individually) until the end of the semester of the MSc.

The relevant directions are given, while rich material and instructions are posted on the e-class

The final assignment includes, in addition to paper and electronic submission, a public oral presentation on the chosen topic, on a set date (usually the 12th or 13th week of classes). The presentation lasts 15 minutes and is followed by 5 minutes of questions from the students present. The teacher intervenes - if necessary - for comments, observations, corrections.

Students are graded on their overall performance in their final paper: 70% on content and editorial specifications and 30% on the preparation of the online presentation and its oral support.

These grades count for a total of 100% in the overall grade that students will receive after the final written theory exam.

(4) TEACHING AND LEARNING METHODS - EVALUATION

COURSE DELIVERY METHOD	In class and remotely	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none"> • Use of PC, ppt slides, projector. • Support of the learning process through the e-class electronic platform 	
MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	26
	Small individual practice tasks	20
	Final Assignment	60
	Independent Study	44
	Course Total (25 workload hours per credit unit)	150
STUDENT EVALUATION	<p>I. Written final exam which includes (70%):</p> <ul style="list-style-type: none"> - Comprehension questions on what was learned - Critical questions on relevant topics - Multiple choice questions <p>II. Delivery – presentation of written assignment (30%).</p>	

(5) RECOMMENDED-BIBLIOGRAPHY

- Suggested Bibliography:

- *Sobon J.A., Schroeder R. 1984. Timber Frame Construction: All About Post-and-Beam Building.*
- *Sobon J.A., Rower K.. 2001. Historic American Timber Joinery: A Graphic Guide*
- *Lancashire R., Taylor L. 2011. Timber frame construction . TRADA Technology Ltd.*
- *Bensson T. Timberframe: The Art and Craft of the Post-And-Beam Home. P. 232.*
- *Cooper J. Log Homes Made Easy. P. 288.*
- [http://www.forestry.gov.uk/pdf/Timber-frame-buildings-a-guide-to-the-construction-process_D496.pdf/\\$FILE/Timber-frame-buildings-a-guide-to-the-construction-process_D496.pdf](http://www.forestry.gov.uk/pdf/Timber-frame-buildings-a-guide-to-the-construction-process_D496.pdf/$FILE/Timber-frame-buildings-a-guide-to-the-construction-process_D496.pdf):