

COURSE OUTLINE

1. GENERAL

SCHOOL	School of Technology		
DEPARTMENT	Department of Forestry, Wood Science and Design (Karditsa)		
LEVEL	Undergraduate		
CODE	KM411	STUDENT SEMESTER	4th
COURSE TITLE	Mechanical Wood Processing		
ACTIVITIES		WEEKLY HRS	ECTS
	Lectures and Workshops	2 + 1	5
TYPE OF COURSE	Scientific area		
PREREQUISITES:	none		
LANGUAGE TEACHING AND EXAMINATION:	Greek		
THE COURSE OFFERED TO STUDENTS ERASMUS	none		
WEBPAGES COURSE (URL)	https://eclass.uth.gr/courses/FWSD_U_122		

2. LEARNING OUTCOMES

Learning Outcomes
<p>The aim of the course is to increase the technical and scientific background of students in basic principles of wood mechanical processing, basic woodworking machines (technical characteristics, executed processes) and safety and health regulations in woodworking industry. At the end of the course, students:</p> <ul style="list-style-type: none"> • Recognize the operation techniques of conventional (classic) woodworking machines (bandsaw, circular saw, planer, thickness planer, spindle moulder, router, drilling machines, sanding machines, lathe, press) and their safety regulations. • Choose the proper woodworking machine in order to finish a woodwork process. • Choose the appropriate cutting tools in order to achieve the best cutting quality.
General Skills
<p>Upon successful completion of the course, the students will be able to develop and cultivate basic professional and social skills:</p> <ul style="list-style-type: none"> • Search, analysis and synthesis of data and information, using the necessary technologies • Adaptation to new situations • Decision making • Autonomous work • Teamwork • Respect for the natural environment • Demonstration of social, professional and moral responsibility and sensitivity to gender issues • Exercise criticism and self-criticism • Promoting free, creative and inductive thinking

3. COURSE CONTENT

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The course focuses on issues related to:

Theory (2 hours / week)

Basic principles of mechanical wood processing. Sawing technology with bandsawing and circular sawing machines. Technology of wood planing by surface and thickness planer. Technology for shaping of wood by the use of spindle moulder and router. Lathe, router, moulder, pantograph. Technology of drilling with single and multiple drilling machines, bit mortising machines, chain mortising machines, hollow chisel mortisers, oscillating chisel mortisers. Technology of formation of tenons and dovetails. Technology of manufacturing of wood products by the use of pressing techniques. Technology of sanding. Types and principles of rotating cutting tools.

Laboratory (1 hour / week)

- Sawing technology with bandsawing and circular sawing machines.
- Technology of wood planing by surface and thickness planer.
- Technology for shaping of wood by the use of spindle moulder and router.
- Technology of drilling with single and multiple drilling machines, bit mortising machines, chain mortising machines.
- Technology of formation of tenons and dovetails.
- Technology of manufacturing of wood products by the use of pressing techniques.
- Technology of sanding.
- Types and principles of rotating cutting tools.

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY METHOD	Face to face in classroom and laboratory	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of PC – PowerPoint presentations Use of movies Lecture support via e-class	
MANAGEMENT OF TEACHING	Activity	Semester Workload
	Lectures	39
	Studio workshops	30
	Individual and work study for term assignment	56
	Course Total	125
STUDENT EVALUATION	Final evaluation 1. Final written exams for theory (50%) 2. Final oral exams for the laboratory (50%)	

5. RECOMMENDED-BIBLIOGRAPHY

https://eclass.uth.gr/modules/document/?course=FWSD_U_122

- Clark, E., Ekwall, J. Culbreth, T. and Willard, R. 1987. Furniture manufacturing equipment. North Carolina State University.

- Γρηγορίου Α. 1989. Σημειώσεις Τεχνολογίας Προϊόντων Μηχανικής Κατεργασίας. Εργαστήριο Δασικής Τεχνολογίας, Τμήμα Δασολογίας και Φυσικού Περιβάλλοντος, Α.Π.Θ.
- Κακαράς, Ι. 1994. Πλάνισμα ξύλου και ποιότητα επιφάνειας. Ξύλο Έπιπλο 1994.
- Καρτάσης, Ι. 1985. Το Πριστήριο. Μηχανικός Εξοπλισμός, Τεχνική της Πρίσης, Υπολογισμοί. Εκδόσεις Ξύλο- Έπιπλο.
- Koch P. 1964. Wood machinery processes. Ronald press Co.
- Rudkin, N. 1998. Machine Woodworking. Arnold (Hodder Headline Group).
- Τσουμής, Γ. 1999. Επιστήμη και τεχνολογία του ξύλου. Τόμος Β: βιομηχανική αξιοποίηση. Υπηρεσία δημοσιευμάτων Α.Π.Θ.
- Φιλίππου, Ι και Ι. Μπαρμπούτης. 2000. Σημειώσεις Τεχνολογίας Ξύλου. Εργαστήριο Δασικής Τεχνολογίας, Τμήμα Δασολογίας και Φυσικού Περιβάλλοντος, Α.Π.Θ.
- Wolfgang, N. 1996. Κατεργασίες ξύλου. Βιβλιοθήκη ξυλουργού – επιπλοποιού.