COURSE OUTCOME

1. GENERAL

SCHOOL	Technology		
DEPARTMENT	Forestry, Wood Science & Design		
LEVEL	*Undergraduate*		
CODE	ΞΣΥ 741	**STUDENT SEMESTER**	7TH
COURSE TITLE	**CNC WOOD PROCESSING**		

ACTIVITIES	**WEEKLY HRS**	**ECTS**
Lectures and Workshops	**2 + 1**	**6**

TYPE OF COURSE	Scientific Area
PREREQUISITES:	None
LANGUAGE TEACHING AND EXAMINATION:	Greek
THE COURSE OFFERED TO STUDENTS ERASMUS	No
WEBPAGES COURSE (URL)	

2. LEARNING OUTCOMES

Learning Outcomes

The course aims for students to be taught primary complex - modern woodworking CNC machines, their technical characteristics, the quality they can perform, and the applied technology. The principles and types of modern woodworking cutting tools are also examined. Knowledge is provided regarding the hygiene and safety of using the above machines.
Upon completion of the course, the student should be able to:

- To know how CNC machines operate, their safe handling, and the necessary hygiene measures.
- To know how the adhesive margins and the shaping surfaces work, their safe handling and the taking of the necessary hygiene measures.
- To choose the appropriate machine concerning the form of processing, it is called to apply.
- Know the principles and types of rotary cutters used in woodworking machines.

General Abilities

- Search, analyse and synthesis of data and information using the necessary technologies
- Adaptation to new situations
- Decision making
- Autonomous Work
- Demonstration of social, professional and moral responsibility
- Exercise criticism and self-criticism
- Promoting free, creative and inductive thinking

3. COURSE CONTENT

Theory (2 hours/week)

In the theoretical part of the course, students are taught complex-modern and high-productivity woodworking machines, such as CNC digital guiding machines. Systems that belong to the ancillary facilities of a woodworking area (compressed air systems, waste removal systems and product transport systems) are also taught. The principles and means of woodworking with modern rotating cutting heads and the technology of laser woodworking are also taught. In each course, the types of machines, their technical characteristics, the cutters they use, the forms of processing they perform and their applications in manufacturing products are taught. Knowledge is provided regarding the hygiene and safety of the use of the above machines, both at the level of the cutting tool and as a whole machine. The corresponding English terminology is given.

Laboratory (1 hour/week)
In the laboratory part of the course, students are trained in the use of modern CNC woodworking machines, i.e., the characteristics of a CNC machine, basic programming functions, loading files, cutter changing, fixturing and work table preparation, maintaining the machine, etc.
It teaches the technology of glueing fringe strips on wooden boards, the technology of laser wood processing and the modern cutting heads used in wood processing.
The student exercises in the laboratory in determining quantitative returns and in the elaboration of time studies for the production of a piece of furniture.
Knowledge is provided regarding the hygiene and safety of the use of the above machines, both at the level of the cutting tool and as a whole machine. In addition, the corresponding English terminology is given.

4. TEACHING AND LEARNING METHODS - EVALUATION

DELIVERY METHOD	In the class
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	• Use of PC - PowerPoint - projector slides • Use of woodworking tapes (via PC) • Support of learning process through the electronic platform e-class
MANAGEMENT OF TEACHING	
STUDENT EVALUATION	Final evaluation: I. Final theory examination (50%) which includes: - Short answer questions from all the material. II. Oral examination in the laboratory (50%).

Activity	***Semester Workload***
Lectures	39
Semester work	45
Laboratory Exercises	66
Self-dependent study	150

5. RECOMMENDED-BIBLIOGRAPHY

Books

- 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.
- The Leitz Lexicon. 1998. Handbook for woodworking machine tools. Edition 2, 1998, Gebr. Leitz GmbH & Co. OberKocken.