



COURSE: WOOD TECHNOLOGY AND FOREST LOGGING

ACADEMIC YEAR: 2016-2017

TYPE OF EDUCATIONAL ACTIVITY: (Characteristic)

TEACHER: Prof. Nicola Moretti

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web:

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mobile (optional): 3204371057

Language: Italian

ECTS: (lessons e
tutorials 6
/practice 3)

n. of hours: (lessons
e tutorials
48/practice 48)

Campus:
Potenza/Matera
Dept./School: SAFE
Program: as follow

Semester: I-II

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The goal of the course is to give students the basic elements for the knowledge of the physical and mechanical properties of wood, forest products and logging. The main concepts regarding the rational use of wood will be given in order to adequately address the management and planning of forests, as well as the possibility of establishing for selected study cases, appropriate forest utilization choices and employed machines. The learning outcomes will be achieved through the study of proposed texts, conducting practical exercises in the laboratory, technical visits in specialized wood companies, writing individual and/or group papers for preparing the final exam.

Knowledge and understanding: *the student must demonstrate knowledge and understanding of the various types of forest use for an appropriate ecological planning of the territory and the choice of machines for their correct use, as well as the physical and Wood mechanics.*

Ability to apply knowledge and understanding: *the student must in practice apply the acquired knowledge, also, and above all, in areas other than those in which the learned Knowledge is traditionally used.*

Identify the main types of forest utilization and the correct use of forestry machines.

The ability to identify the main physical and chemical properties of wood material, both from the microscopic and macroscopic point of view, and the main products of its transformation.



Autonomy of judgment: *Students must be able to deepen their own learning as they learn, in order to use the basic knowledge as a starting point that allows them to achieve further results, characterized by an increased maturity and a degree of autonomy of judgment Ever wider.*

Communicative Skills: refers to the ability to communicate clearly and comprehensively the acquired knowledge to their interviewees; Communication must also be understandable to those who do not have a specific preparation on the subject. Ability to communicate using a correct language by using mathematical and graphical means of knowledge and skills acquired.

Learning Skills: The attendance rate is a centralized teaching aid, as well as a precise obligation; However, the student must progressively become self-reliant by the teacher, acquiring the ability to refine and deepen his / her knowledge through a non-autonomous and originality training course.

PRE-REQUIREMENTS

Basic knowledge of silviculture, physics and dendrometry. Basic use of pc (Office package).

SYLLABUS

Wood-working and forest harvesting: technical choices, operational phases, equipment and machines.

Harvesting (climbing, debarking, sawing), concentration (depression, trawling with animals and with winches) skidding (for free trough with risine, tractors, tractors and winch, cable cars).

Safety and risk assessment in activities related to forest harvesting.

Microscopic wood identification and analysis. Macroscopic and microscopic wood recognition. Wood defects and wood moisture relationships.

Physical properties of wood: Weight Density – Directional shrinkages hardness.

Mechanical properties of wood: Compression extension bending. Modulus of Elasticity Main machines for woodworking-Aging and artificial drying.

Classification of the main wood-based panels. UNI -ISO.

Outdoor exercises in forestry. Technical visits in forest harvesting sites and in specialized wood-working companies. Laboratory lesson



CONTENTS OF THE COURSE

Wood processing and forest utilization: technical choices, operating phases, equipment and machines.

Harvesting (crushing, barking, concentrating and exhuming), trawling with animals and winches) pickling (free with risers), tractors and winches, cable cranes.)

Assessment of safety and risk in forestry activities.

Wood identification and microscopic analysis. The recognition of macroscopic and microscopic wood. Wood defects and wood and moisture relationships.

Physical properties of wood: Density - hardness retraction. Mechanical properties of wood: compression flexion and traction. Module of. Main elasticity woodworking machines - and artificial and natural drying. Classification of the main wooden panels. UNI-ISO.

Field exercises on uses. Technical visits to forestry sites and specialized woodworking companies. Laboratory lessons.

Educational activities and teaching hours

Lectures: 6 CFU x 8 hours = 48

Field Exercises: 2 CFU x 16 hours = 32

Laboratory: 1 CFU x 16 hours = 16

Formative objective: X credit

Lessons (48 hours = 6 CFU)

1 CFU Types of woodworking and forestry use. Factors affecting the choice of wood work. Operating phases, equipment and techniques.

2 CFU Excavation, setting up (trampling, barking, dumping), concentration (climbing, trawling with animals and winches) exhumation (for free climbing, with risers, tractors, cable cars). Introduction to safety and risk assessment in activities related to Forestry uses.

3 CFU Microscopic and macroscopic recognition of wood. Wood defects. Wood moisture ratio.

4 CFU Physical properties: Dimensional retrieval. Bulk density- Basal density.

5 CFU Mechanical Properties: Compression, Flexion Traction and Elastic Module.

6.CFU Main woodworking machines-Artificial seeding and drying. Classification of the main wooden panels. UNI-ISO Rules.

Exercises in forestry and multidisciplinary sites (32 hours = 2 CFU)

1CFU Visit to forestry sites with analysis of the main issues.

1CFU Visit of wood processing companies and related issues.



Laboratory Exercises (16 hours = 1 CFU)

Practical tutorials at the Forestry Technology Laboratory University of Basilicata.

Macroscopic and microscopic recognition of wood.

DIDACTIC METHODS

The course is organized as follows:

Lectures: 6 CFU x 8 hours = 48

Exercises: 2 CFU x 16 hours = 32

Laboratory: 1 CFU x 16 hours = 16

During both the field and laboratory exercises, students will be trained by both the teacher and the researcher at the AGR-06 grouping. (Wood Technology and Forestry Applications, students will have free access to the lab for further individual tutorials.

DATE OF EXAMINATION REQUIRED

All months (the first Wednesday of the month), if festive on Thursday.

TEACHING METHODS

Theoretical lessons, Laboratory tutorials, Technical visits.

EVALUATION METHODS

Intermediate verifications, Written examination, Oral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

G. Giordano- Tecnologia del legno. Tre volumi. UTET editore

Hippoliti G, Piegai F., 2000. La raccolta del legno. Compagnia delle foreste.

G. Giordano- Il legno-Vademecum per, falegnami, artigiani, forestali e collaudatori di legname.

INTERACTION WITH STUDENTS

Deepening educational materials will be distributed in the classroom during the lessons and at the end of the course. The teacher will be available to students every day via web (email: nicola.moretti@unibas.it) and personally on Tuesday, Wednesday and Thursday from 10 am to 12 am at UNIBAS in his room (SAFE Building 3B, 2° floor).

RECEPTION TIME STUDENT Professor: MORETTI NICOLA



GIORNO	DALLE ORE	ALLE ORE	Presso
LUNEDI			
Tuesday	10	12	<i>In the office</i>
Wednesday	10	12	<i>In the office</i>
Thursday	10	12	<i>In the office</i>
VENERDI			

SEMINARS BY EXTERNAL EXPERTS YES x NO

FURTHER INFORMATION
