

ACADEMIC YEAR: 2019-2020

COURSE: Forestry mechanization

TYPE OF EDUCATIONAL ACTIVITY: Basic course of the three-year degree in Forestry and Environmental Sciences

TEACHER: Paola D'Antonio

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Language: Italian

ECTS: (lessons / tutorials/practice): 6	n. of hours: 46 hours of lessons 10 hours of practice	Campus: Potenza School: SAFE Program: Bachelor degree in Forestry and Environmental Sciences	Semester: II
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EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The module aims to: raise awareness of the main machines used in plant operations, maintenance and use of forests; to understand the principles of operation and the technical-functional characteristics of the aforesaid machines; allow the technical evaluation of the efficiency of the machinery used, in order to correct a mechanization of the forest site; transfer the knowledge necessary to adapt the work, the environment and working conditions to the human being in charge to carry out the work itself, in order to increase its efficiency and productivity, while preserving their physical and mental health and preventing accidents. Will be transmitted to the knowledge and understanding of the technical and functional characteristics of the machines used in the forestry sector, the use of those applications, the main risk factors (ergonomics and safety) related to the various forestry work. Knowledge and ability to use the specific language of mechanics and forestry mechanization, ergonomics and job security.

PREREQUIREMENTS

SYLLABUS

Lessons

CFU-1: Introduction: Levels, patterns and development trends in forest mechanization; Physical reminders: Mechanical engineering

CFU-2: The internal combustion engines: Composition and functioning (Petrol and Diesel); the tractor and its forest use: Technical and functional characteristics; the main bodies of the transmission of motion, direction, and propulsion. The coupling devices and drive gear.

CFU-3: Stability of forest resources: Tack, longitudinal and lateral stability, of loss of stability and control limits, soil compaction; calls of forest exploitation: Work Systems and action planning.

CFU-4: Operating machines for felling and preparation: The chainsaw and ancillary equipment (TIRFOR, felling levers, etc.); machines for the concentration and extraction: Winches, risine, gullies, trailers; Cableways and cable cranes: General, steel wire ropes, trolleys, winches and accessories, sizing; other machines: Transplanters, cutters, barkers, chippers.

CFU-5: Combined Forestry Equipment: Harvester, processor, feller, skidder; organization of work: The elementary stages of labor, skills and labor productivity; Economic Assessment: Overview of operating costs. Criteria of technical and economic choice; worksite safety: ergonomic considerations, safety signs at work.

Practices

CFU-6 (exercises): Design and verification of the machines used in the main cultivation operations and / or inspections in forest yards to practical deepening of the topics covered in the lectures.

TEACHING METHODS

46 hours of lessons 10 hours of laboratory and field practices. During practices students will be asked to analyze specific forest management case studies.

EVALUATION METHODS

Oral examination at the end of the course. Three questions, one of which related to topics addressed during practices.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

- Teaching material distributed in classroom
- Meccanizzazione forestale – Hippoliti. Edagricole.
- Meccanizzazione forestale intermedia – Spinelli. Edagricole.

INTERACTIONS WITH STUDENTS

- in the office at planned days/hours (usually on Wednesday)
- email, skype (every time)
- mobile (every time)

EXAMINATION SESSIONS (Forecast)

Calendar:

12/2/2020

18/3/2020

15/4/2020

24/6/2020

15/7/2020

23/9/2020

21/10/2020

16/12/2020

17/2/2021

14/4/2021

<https://unibas.esse3.cineca.it/Home.do>

EVALUATION BOARD

PAOLA D'ANTONIO

GIOVANNI CARLO DI RENZO

GIUSEPPE ALTIERI

SEMINARS BY EXTERNAL EXPERTS YES
