

ACADEMIC YEAR: 2017-2018

COURSE: Silviculture and principles of forestry management

TYPE OF EDUCATIONAL ACTIVITY: Characteristic

TEACHER: Domenico Pierangeli

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Language: Italian

ECTS: (lessons / tutorials/practice): 12(10frontal lectures; 2 practice)	n. of hours: 80 hours lectures 32hours practice	Campus: Potenza School: SAFE Program:LT Forest and Environmental Sciences	Semester: I & II
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EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course has as its objective the learning of knowledge on evolution of forestry, history of forests, man-nature relationship, analysis of forest stands. Government and treatment of forests. Technical aspects relating to the principles of management of populations in relation to the species in pure and mixed groups. preliminary and preparatory surveys in the drafting of the forestry management plan. Technical specifications for the design and management of wood arboreal plants. Notes on forestry plantation-related funding and semen analysis, propagation via asexual and sexual reproduction, the farming techniques and marketing of seeds with particular reference to legislative aspects. Will complete the formation of the student participation in field exercises, technical seminars of external experts and the viewing of films and documentaries technical, preparation of project technical reports.

PREREQUIREMENTS

General botany and forestry; General ecology and forestry; Agronomy; Forest mensuration.

SYLLABUS

Lessons 1

General forestry. Definition and objectives of forestry. Evolution of forestry.

The classical silviculture: financial silviculture, forestry ecologically based, natural forestry. The ecosystem of the forest. Forest history.

The analysis of forest stands: stational diagnosis; characteristic parameters of populations (extension, origin, composition, structural characteristics).

Lessons 2

Government and treatment of forests.

Government high forest: the renewal seed in forest stands; natural high forests and high forests of artificial origin. of high forests of treatment forms: clear cutting, successive cuts, occasional cut.

Executive procedures of clearcutting (small area, a hole, a rim, with reserves, stripes, wings). Ecological effects and impact of clearcut.

The processing in subsequent cuts: preparation of cuts and of renewal cuts (cutting of sementazione, secondary cuts, clearing cutting), the period of regeneration; application methods (intensity of the levy in the cuts, number and repeat interval of secondary cuts, duration of the renewal period); uniform successive cuts, successive cuts on small surfaces (in groups, in strips, to hem, in groups, and in strips); ecological aspects.

Lessons 3

No coeval forest. The intermittent cutting: cutting characters, characteristic parameters of a high forest disetanea, cut insurance and duration of the insurance period, the diameter of recidibilità; ecological aspects. interlayers cuts: the cuts targets: type of action (displacement and thinning). Thinning: Conditions (biological, cultural ecological, economic), type, degree, systems, methods; effects (on the environmental conditions of the populations, production, health).

Lessons 4

Government coppice: renewal asexual (types of gems, real suckers, suckers false, root suckers), pollonifera capacity of forest species. Factors favoring the maintenance of the coppice, factors that limit their use. Types of coppice: physiognomy, structural-silviculture.



coppice forms of treatment: clearcutting (simple coppice, coppice matricinati); Cutting steering (coppice to steering). Coppice matricinati: cutting era, customary rounds, matricinatura (role of matricine, choice of matricine, matricine of spatial density and distribution). Measures to improve the coppice: thickening and cultural practices (cleanups, pruning of matricine, displacement and thinning, and succisione tramarratura); measures to make sustainable use of coppice with soil conservation. Outline of coppice for biomass production (Short Rotation Forestry). Coppice in steering: the average diameter of the suckers who fall to cut and period of insurance; characteristics of topsoil, treatment, benefits. Government to coppice: the characteristic elements of the component to high forest and coppice. Recruitment of plants that must be the high forest, their distribution, and the breakdown into age classes. The treatment, the production, the advantages. Conversion of forests: definition; matricinato conversion from coppice to coppice; matricinato from coppice to high forest (different methods of conversion). woods transformations: definition; transformation of the high forests of the same age in disetanee; matricinati from coppice to coppice in the steering.

Lessons 5

Nursery: Current situation of the nursery Italian and European production. Forest nurseries: design and management criteria. Provided the seed and seed testing, propagation via sexual reproduction and asexual.

Breeding techniques in the nursery; marketing and distribution of seedlings. Legislative aspects of seed and nursery.

Lessons 6

Sign Special Forestry:

Forest species in Italy and the state of forest resources according to the different census methods: ISTAT and the National Inventory of Forests and Carbon Tanks Forestry (2005). Classification of forest formations in the different vegetation zones.

Forestry in the Mediterranean area: Characters vegetation and climate of the Mediterranean environment.

Mediterranean. Holm oak woods. Mediterranean coniferous forests: pine Aleppo pine forests.

Forestry in the basal end: Climatic conditions of the basal end. Deciduous oak (oak, oak, turkey oak, farnetto) and related species. chestnut woods.

Forestry in the mountain range: Climate of the mountain belt. beech woods. pure and mixed spruce forests with beech and other hardwoods. Pine forests of pines blacks: black pine of Austria, pine Barrea, Pine Larch, Pine loricato.

Hardwoods common to several vegetation zones: maples, ash, cherry, lime trees, elms.

Lessons 7

Wood Arboriculture

General part: General considerations and objectives. Analysis of the station. Techniques of planting, cultivation and plantation management.

Special section: Characteristics of the species most commonly used in pure and mixed systems: poplar, eucalyptus, hardwood "noble" (chestnut, cherry, walnut, maple, ash, lime trees), deciduous "minor" (alder, pear, mountain ash, eleagni), especially "exotic" of conifers and deciduous trees, Monterey pine, larch pine, white pine, cedar, fir, paulownia.

The Pac forestry aspects: the inherent law of wood arboriculture.

Lessons 8

Mediterranean reforestation. Criteria for implementation, management, evolution, replacement. Reference to the legislation that allowed the rebuilding in Italy.

Lessons 9/10

Forest management principles.

From "Project sustainable forest management". technical orientations. Construction of the particle. culture identity. particle description. crop classification. Other preliminary and preparatory surveys of the Plan of adjustment. Edition of the Plan: Synthetic documents composing. cartographic documents.

Forestry legislation:

Elements of forest legislation of Basilicata and Campania.

Lessons 11

(Tutorial): technical visits in the woods, in the nursery, in wood plantations, daily life and more days. Preparing Istanza- cutting report - cutting project. Project of wood plantation.

Lessons 12

(Tutorial): workshops with freelance technicians and officials of bodies and the CFS. Screening and discussion of three

films and some technical documentaries.

TEACHING METHODS

The course consists of 80 hours of lectures and 32 hours of laboratory exercises and field. During the exercises the students, through the analysis of the station, the botanical reliefs and dendrometric and silvicultural analysis will be able to fill out a cutting plan and a draft arboriculture plant wood and work with the master's degree in the preparation of the Plan forest management.

EVALUATION METHODS

Learning will be verified during an oral exam at the end of the course. The oral exam will consist of an oral exam on the topics covered during the course and discussion of a paper prepared by the student.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Cappelli M. (1991) Selvicoltura generale. Edagricole, Bologna.
Bernetti G., Del Favero R., Pividori M., (2012) Selvicoltura produttiva. Edagricole, Bologna.
Piussi P. (1994) Selvicoltura Generale. UTET, Torino.
Bernetti G. (1995) Selvicoltura Speciale. UTET, Torino.
Bernetti G. (2005) Atlante di selvicoltura. Edagricole, Bologna.
Bernetti G. (1989) Assestamento forestale (Prima Parte). DREAM, Arezzo.
AA.VV. (2002) Progetto bosco gestione sostenibile. Regione Emilia Romagna.
Mercurio R., Minotta G., (2000) Arboricoltura da legno, Clueb, Bologna.
AA.VV., (1981) Pioppicoltura. REDA, Roma.
Gradi A., (1980) Vivaistica forestale. Edagricole, Bologna.
Magini E., (1985) Appunti di Vivaistica forestale. Ed CUSL Firenze.
AA.VV.-Istituto di Selvicoltura di Arezzo . Linee guida per il reperimento e ll'impiego dei materiali di base - Per l'applicazione della direttiva europea 1999/105/CE

Material distributed during the lessons

Course topics of subsidy DVD

INTERACTIONS WITH STUDENTS

At the beginning of the course, after describing the objectives, programs and test procedures will be drawn up a list of students who intend to take the course with your full name, serial number and full address. After the first lesson the teacher will provide the educational material that will continue to be distributed gradually during the course.

- in the office at planned days/hours: Tuesday 17.00-18,00 ; Wednesday 15,00-16,00

- e-mail and phone mobile

EXAMINATION SESSIONS (Forecast)

24/1/2018, 14/02/2018, 21/3/2018, 18/04/2018, 16/5/2018, 20/6/2018, 18/7/2018, 19/09/2018, 17/10/2018, 21/11/2018, 19/12/2018, 16/1/2019, 13/2/2019/, 20/3/2019.

EVALUATION BOARD

Prof. Domenico Pierangeli, Prof. Francesco Ripullone, Prof. Nicola Moretti, Prof. Luigi Todaro

SEMINARS BY EXTERNAL EXPERTS YES
