

COURSE: NON FOOD HERBACEOUS CROPS

ACADEMIC YEAR: 2019-20

TYPE OF EDUCATIONAL ACTIVITY: Characterizing

TEACHER: Piergiorgio Gherbin

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Language: Italian

ECTS: 8 lessons + 1
tutorial

n. of hours: 64 lessons + 16
tutorial

Campus: Potenza
Dept./School: School of
Agriculture, Forestry, Food and
Environmental sciences
Program: Agricultural Sciences and
Technology (LM)

Semester: 1st

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

Content and knowledge: systematics, biology, cultivation technique and use of the product of the main alternative non-food crops to be proposed for Italy. The discipline is framed in view of the diversification of crops depending on the production sustainability. Production sectors treated: technical oils, biomass, fiber, energy, starch, alcohol, dyes, sweeteners, gums, biocides crops, cover crops, technical turves.

○ Knowledge and understanding: knowledge of herbaceous non-food crops with reference to the most widespread species as well as those that can be introduced into Italian crop systems; understanding the influence of crop systems and agronomic practices on the key quanti-qualitative parameters; production chains and their criticality.

○ Applied knowledge and understanding: ability to identify the most suitable species to different crop environments depending on their intrinsic characteristics and the social, technological and industrial context in which they can be incorporated.

○ Autonomy of judgment: ability to gain an overall assessment of the various aspects of a single crop or group of crops in order to optimize production both quantitatively and qualitatively.

○ Communication: ability to emphasize the importance of low-input cultivation techniques and environmental conditions *sensu lato* with regard to non-food herbaceous crops.

○ Ability to learn: ability to access documented sources of statistical data (surfaces, productions, trade, market prospects) and to interpret and summarize data; the ability to document, through reliable sources, on issues related to agronomic and productive aspects.

PRE-REQUIREMENTS

- Knowledge of the principles of Botany, Crop physiology, Agronomy and Crop Science.

CONTENTS OF THE COURSE

ECTS all: with the active participation in teaching hours and by personal study of texts / references provided by the teacher, the student will acquire knowledge about:

ECTS 1: general problems relating to the areas of use of the products obtained from alternative non-food crops, with particular reference to the environmental advantages offered by these, with reference to the technical routes both of the type of product obtained and to its industrial utilization.

ECTS 2,3: a) the potential offered by the major species of agricultural interest for the production of fibers and/or to industrial use of biomass energy target; b) elements that characterize biology, systematics, agro-technical, production, characteristics and use of the product/s.

ECTS 4: a) the potential offered by the major species of agricultural interest for the production of technical oils; b) elements that characterize the biology, systematics, the agro-technical, production, characteristics and use of the product/s.

ECTS 5: a) the potential offered by the major species of agricultural interest for the production of sugar and starch; b) elements that characterize the biology, systematics, the agro-technical, production, characteristics and use of the

product/s.

ECTS 6: a) potential offered by the main species for the coverage of agricultural land (cover crops) and species intended for the realization of technical grassing; notes on "bioremediation"; b) elements that characterize the biology, systematics, the agrotecnica, effectiveness and possible uses.

ECTS 7: a) potential of the main species used for the production of alternative sweeteners and species for biocidal activity; b) elements that characterize the biology, systematics, the agrotecnica, effectiveness and possible uses.

ECTS 8: a) the potential offered by major species intended for the extraction of natural dyes, and species for the production of natural gums; notes on some species "multi-purpose"; b) elements that characterize the biology, systematics, the agrotecnica, effectiveness and possible uses.

ECTS 9 (tutorial): Preliminary considerations by drafting a scientific report based on bibliographic and related oral presentation using audiovisual.

TEACHING METHODS

The course is organized as follows:

- theoretical lessons on all subjects of the course (64 hours)
- weekly classroom tutorials, aimed to setup the creation and exhibition of the work related to 9th ECTS

EVALUATION METHODS

The aim of the examination is to test the level of achievement of the previously mentioned educational goals. The examination is divided into 2 parts:

- oral presentation of the work done in ECTS 9 as practical test;
- oral examination which will assess the knowledge of specific themes and the ability to link and compare different aspects covered during the course.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

AAVV : Oleaginose non alimentari. Edagricole.

AAVV : Le colture da fibra. Edagricole.

AAVV : Le piante coloranti. Edagricole.

AAVV : Le colture di nicchia. Edagricole.

Baldoni R., Giardini L. : Coltivazioni Erbacee

Class notes

INTERACTION WITH STUDENTS

At the beginning of the course, the objectives and contents of the course will be illustrated, and the way of evaluating the learning. The list of attending students will be drawn up with telephone and email addresses. Teaching material will be provided to students during the lessons. Reception hours: from Tuesday to Thursday, after appointment, at the teacher's office. In addition to the weekly reception time you will be able to communicate with the teacher via email and service phone.

EXAMINATION SESSIONS (FORECAST)

19-2-19; 19-3-19; 16-4-19; 14-5-19; 11-6-19; 16-7-19; 3-9-19; 22-10-19; 12-11-19; 10-12-19;14-1-20; 4-2-20; 3-3-20.

Other examination dates can be agreed upon with the students.

SEMINARS BY EXTERNAL EXPERTS NO



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AGRARIE, FORESTALI,
ALIMENTARI
ED AMBIENTALI**