

COURSE: Herbaceous crops module

ACADEMIC YEAR: 2018-2019

TYPE OF EDUCATIONAL ACTIVITY: Affine)

LECTURER: Prof. Mariana Amato

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mobile (optional):

Language: Italian

ECTS: 5 (4 Lectures + 1 practicals)	n. of hours: 32 h lectures + 16 h practicals	Campus: Potenza Dept./School: School of Agriculture, Forest, Food and Environmental Sciences Program: MSc in Food Science and Technology	Semester: 2
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EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The course aims at providing basic tools for the evaluation and choice of plant-based food, for the unambiguous identification of selected plant species and products, and for detecting species and issues relevant for human health. Relationships between origin, management and quality of plant-based food is also presented with respect to nutrient content, nutraceutical value, rheological and technological properties and issues related to typical productions.

- **knowledge and understanding:** knowledge and understanding of the scientific nomenclature and classification of plants. Identification of gluten cereals and gluten-free seeds at the level of plants species. Relationships between origin, management and quality of plant-based food with respect to nutrient content, nutraceutical value, rheological and technological properties and issues related to typical productions.
- **applying knowledge and understanding:** applying basic notions for evaluating and testing the quality of plant-based food materials; applying simple technical tools for the choice of plant species and variety for food use.
- **making judgements:** Making judgements about the acquisition and destination of plant-based materials based on their properties and origin.
- **communication skills:** ability to communicate the relevance of primary production systems on food quality and safety to technical and non-technical audience, food buyers and traders
- **learning skills:** Ability to access technical and scientific literature and sources of statistical data. Ability to discriminate relevant information from non-relevant issues.

PRE-REQUIREMENTS

The courses of Organic chemistry and Genetics are required.

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SYLLABUS

The group is divided in 5 teaching blocks (BD), 4 of which are lecture blocks and 1 is of practicals.

BD1 Introductionz to food plants: scientific nomenclature and identification (8h)

Nomenclature and taxonomy of plants. Classification of crops and plant products.

Structure and chemical composition of leaves and fruits for the most common plant-based products.

Quality of plant products.

Cereals and technological quality related to genetics and management. Waxyness.

BD2 Environment and system of production (8 h)

Introduction to environments and management systems for the production of herbaceous plants. Relation the quality and safety of food, rheological properties of cereals and certification.

BD3 Cereals (8 h)

Classification of cereals.

Hordeae.

Wheat.

Rice

BD4 Oilseeds and protein crops (8h)

Oilseeds and Grain legumes. Effects of genotype, environment and management on yield and quality: fatty acids, proteins, mycotoxins.

BD5 Practicals (16h)

Lab tests and case studies on seed and plant identification, physical and rheological properties, food safety related to agronomic management.

TEACHING METHODS

The course includes 32 h lectures and 16 h practical (laboratory). The students attending the course will be stimulated to actively participate to the course using a variety of methods (writing of short essays and answering open-answer questions, using lab methods and producing lab reports.)

EVALUATION METHODS

The students attending the course need to pass two written (mid term, end of course) examinations (open answer questions). The students not attending the course or who are unable to pass the written examinations will have to sit for an oral examination and a practical examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Course material and handouts will be provided in electronic format during the course and temporarily stored on a document cloud which will be made accessible to the student.

Suggested textbooks

Agronomia. P. Ceccon, M. Fagnano, C. Grignani. Edises. 2017

Principles of Cereal Science and Technology, Third Edition 2010 Jan A. Delcour and R. Carl Hoseney R. Carl AACC International

Coltivazioni erbacee vol. I - Cereali e proteaginose di Baldoni / Giardini Patron editore

INTERACTION WITH STUDENTS

During the first lecture, the structure and organization of the course and the evaluation procedure will be presented. The lecturer will be available for receiving students at least 4 h a week (on Monday and Wednesdays) or after the lectures. Students can also communicate with the lecturer via E-mail.

EXAMINATION SESSIONS

to be decided according to the students' needs

EVALUATION COMMITTEE

Prof. Mariana Amato (President) Prof. Vitale Nuzzo (member) Prof. Bartolomeo Dichio (replacement)

SEMINARS BY EXTERNAL EXPERTS YES X NO

FURTHER INFORMATION
