

COURSE: Herbaceous crops

ACADEMIC YEAR: 2017-2018

TYPE OF EDUCATIONAL ACTIVITY: Characterizing

LECTURER: Prof. Mariana Amato

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mobile (optional):

Language: Italian

ECTS: 6 (5 Lectures + 1 practicals)

n. of hours: 56 (40 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

#### EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

- The course aims to provide the basic knowledge about the productive cycle of the main herbaceous crops, and to provide elements for understanding the relations between agricultural systems, management and quality of product, developing criteria and methods for planning appropriate management strategies oriented to cropping system sustainability and productive/qualitative goals.
- **knowledge and understanding:**
  - classification and identification of the main herbaceous crops
  - management of herbaceous crops
  - relations between environment, management and quality
  - understanding and elements of planning of management scenarios for sustainability and for products with different destination
  - base elements for testing the quality of products
- **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
  - applying knowledge for the identification of the main herbaceous species
- **making judgements:**
  - making judgements about management alternatives
  - 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.

#### SYLLABUS

The course consists of 5 blocks of lectures:

##### **Introduction and basic elements (5 h lecture 2 h practicals)**

Problems and perspectives of herbaceous crops in Italy and worldwide

Classification of herbaceous crops.

Classification of Cereals

The kernel

Identification of kernels and inflorescences

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Wheat as a model crop

Rheological tests for the evaluation of quality in relation to agronomical variables

**Other cereals (8 h lecture+ 3 h practicals).**

Barley, Oat, Rye

Rice

Maize

**Oilseeds and pulses (7h lecture + 1h practicals)**

Sunflower

Soybean

Chickpea

**Forage crops (4h lecture + 2h practicals)**

Classification of forage crops

Alfalfa

Other crops and their identification

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**TEACHING METHODS**

The course includes 40 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.)

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**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.

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**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

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

Coltivazioni erbacee vol. II - Piante oleifere, da zucchero, da fibra, orticole e aromatiche

di R. Baldoni e L. Giardini Patron editore

Coltivazioni erbacee vol. III - Foraggiere e tappeti erbosi di R. Baldoni e L. Giardini Patron editore

For consultation:

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

AA.VV. Il grano. Collana Coltura & Coltura, ed. Art Servizi Editoriali, Bologna.

AA.VV. Il mais. Collana Coltura & Coltura, ed. Art Servizi Editoriali, Bologna. Letture: FAO:

The state of food insecurity, 2008 ([www.fao.org](http://www.fao.org)) FAO 2008. Climate Change: implications for food safety

([www.fao.org](http://www.fao.org)) MIPAAF. Piano Cerealicolo Nazionale INEA: Rapporto sull'agricoltura italiana

([www.ismea.it](http://www.ismea.it)) Fonti statistiche: [www.fao.org/corp/statistics/en/](http://www.fao.org/corp/statistics/en/) [www.inea.it/pubbl/itaco.cfm](http://www.inea.it/pubbl/itaco.cfm)

[www.USDA.org](http://www.USDA.org)

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**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.

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**SCUOLA DI SCIENZE  
AGRARIE, FORESTALI,  
ALIMENTARI  
ED AMBIENTALI**

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**EXAMINATION SESSIONS**

to be decided according to the students' needs

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**EVALUATION COMMITTEE**

Prof. Mariana Amato (President) Prof. Michele Perniola (member) Prof. Stella Lovelli (replacement)

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**SEMINARS BY EXTERNAL EXPERTS**    YES X    NO

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**FURTHER INFORMATION**

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