

COURSE: **VEGETABLE CROP SYSTEMS**

ACADEMIC YEAR: **2019-2020**

TYPE OF EDUCATIONAL ACTIVITY: characteristic

TEACHER: Prof. Vincenzo Candido

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Language: Italian

ECTS: 6 (5 lectures + 1 practicals)	no. of hours: (40 h lectures + 16 h practicals)	Site: Potenza Scuola: SAFE CdS: Course in Agriculture Technologies - University Cod. 0425 - L-25 Class- Agriculture and Forest Sciences and Technologies	Semester: 2
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### EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The module supplies knowledge on the cultivation, use, storage and qualitative aspects of vegetables cultivated both in open field and in greenhouse, allocated to processing industry and to fresh market. Therefore, fundamental topics are: botanic identification and classification of vegetables and their suitability to be cultivated for high quality productions; main crop systems (conventional, integrated and organic; soilless culture); vegetable farm management and crop scheduling; cultivar choice; qualitative aspects of the seasonal and extra-seasonal vegetables.

- **Applying knowledge and understanding:** the student must demonstrate to be able to analyze the factors affecting vegetable products in relation to the most representative crops. The student must demonstrate the ability to apply his knowledge in different fields, such as botany and agronomy.
- **Making judgements:** ability to propose solutions suitable for obtaining high-quality and environmentally friendly vegetable products.
- **Communications skills:** ability to communicate in a simple way to people the importance of vegetables on human health and the influence of cultivation techniques and genotype on the quality of vegetable products.
- **Learning skills:** ability to access the statistical data sources (surfaces, productions and trade of the main vegetables) and to understand and summarize the data. Ability to document the factors influencing the quality of vegetable products. Ability to document on topics related to sustainable management of vegetable crops.

### PRE-REQUIREMENTS

Basic knowledges concerning botany, agronomy and plant production science are required.

### SYLLABUS

#### Lessons

The activities are divided in 6 blocks.

#### Block 1 ( 8h, lectures)

The student will acquire theoretical and practical knowledges on vegetables by the participation at lessons and also by personal study. Topics to be developed are the following: origin and definition of vegetable crop science, classification criteria of vegetable species. Protection and forcing techniques of the vegetable crops. Main vegetable cultivation methods (conventional, integrated and organic methods; soilless culture); vegetable crop scheduling; cultivar choice; seasonal and extra-seasonal vegetable products.

#### Block 2 ( 8h, lectures):

Propagation modalities of vegetable species. Nursery production of vegetable seedlings and field planting methods. Cultural practices: fertilization, weed control, irrigation. Soil disinfestation. Modality and harvest time of vegetables; quality, use, storage, processing and post-harvest physiology of vegetable products.

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**Block 3** ( 8h, lectures):

Technical and scientific informations on the main vegetable crops for processing industry and for fresh market, with particular reference to those grown in Southern Italy: *Solanaceae* (processing and fresh market tomatoes, potato, pepper, eggplant), *Brassicaceae* (cabbage, broccoli, cauliflower, savoy cabbage, kale, broccoli raab, turnip, radish, minor species).

**Block 4** ( 8h, lectures):

Description of other vegetable species in continuation of the previous block: *Asteraceae* (artichoke, chicory, lettuce, endive and escarole, minor species), *Cucurbitaceae* (melon, pumpkin and zucchini, cucumber, minor species), *Alliaceae* (garlic, onion and shallot, asparagus, minor species), *Apiaceae* (fennel, carrot, celery, parsley).

**Block 5** (8h, lectures):

Description of other vegetable species in continuation of the previous block: *Chenopodiaceae* (chard and red beet, spinach), *Leguminosae* ('borlotto' bean, snap bean, green peas for fresh market and for processing). 'minimally processed' and 'easy to eat' vegetables

**Block 6** (16h, Practices):

Laboratory and farm practices will be conducted in order to give to the students knowledges on classification of the main vegetable plants and the related cultivation techniques.

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**TEACHING METHODS**

Lectures (40 h), laboratory and farm practices (16 h).

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**EVALUATION METHODS**

Oral exam, consisting of questions based on theoretical knowledges and laboratory practices. To pass the exam the students have to achieve at least 18 points on 30.

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**TEXTBOOKS AND LECTURE MATERIAL**

- Pardossi A., Prosdocimi Gianquinto G., Santamaria P., 2018. Orticoltura. Principi e pratica. Edagricole-New Business Media s.r.l., Milano. 371 pp.
- Bianco V.V., Pimpini F., 1990. Orticoltura. Patron Editore, Bologna. 991 pp.
- Tesi R., 2010. Orticoltura mediterranea sostenibile. Patron Editore, Bologna. 503 pp.
- Tesi R., 2008. Colture protette. Ortoflorovivaismo in ambiente mediterraneo. Edizioni Agricole de Il Sole 24 ORE Business Media s.r.l., Milano. 349 pp.
- Notes from lessons.

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**INTERACTION WITH STUDENTS**

During the first lesson, after describing the aims, contents and exam procedures, it will be collected the list of students attending the course enclosed their registration number and e-mail. During the lessons, teaching materials will be provided. Students may contact the teacher anytime by mobile phone or e-mail for any clarifications or to set an appointment in his office at SAFE, I floor. The teacher will meet the students on Tuesday, Wednesday and Thursday, from 10.00 to 13.30.

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**EXAMINATION SESSIONS**

8/7/2020, 9/9/2020, 14/10/2020, 11/11/2020, 9/12/2020, 13/1/2021, 10/2/2021, 10/03/2021, 07/04/2021, 12/05/2021, 16/06/2021.

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**EVALUATION COMMITTEE**

Prof. Vincenzo Candido (President), Prof.ssa Stella Lovelli (Member), Dr. Donato Castronuovo (Replacement member), Prof. Michele Perniola (Replacement member), Prof.ssa Mariana Amato (Replacement member).

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**SEMINARS BY EXTERNAL EXPERTS** YES

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