



Universitat de Lleida

DEGREE CURRICULUM

HORTICULTURAL CROPS

Coordination: BALLESTA REMY, ASTRID

Academic year 2022-23

Subject's general information

| | | | | | |
|--|--|---------|------------|------------------|--------|
| Subject name | HORTICULTURAL CROPS | | | | |
| Code | 102564 | | | | |
| Semester | 2nd Q(SEMESTER) CONTINUED EVALUATION | | | | |
| Typology | Degree | Course | Character | Modality | |
| | Bachelor's Degree in Agricultural and Food Engineering | 3 | COMPULSORY | Attendance-based | |
| Course number of credits (ECTS) | 6 | | | | |
| Type of activity, credits, and groups | Activity type | PRACAMP | PRALAB | PRAULA | TEORIA |
| | Number of credits | 0.6 | 0.2 | 1.3 | 3.9 |
| | Number of groups | 1 | 1 | 1 | 1 |
| Coordination | BALLESTA REMY, ASTRID | | | | |
| Department | HORTICULTURE, BOTANY AND LANDSCAPING | | | | |
| Teaching load distribution between lectures and independent student work | 25 hours of total activities have been considered for one ECTS credit: 10 face-to-face hours and 15 independant student work | | | | |
| Important information on data processing | Consult this link for more information. | | | | |
| Language | Català: 100% | | | | |

| Teaching staff | E-mail addresses | Credits taught by teacher | Office and hour of attention |
|-----------------------|-------------------------|---------------------------|------------------------------|
| BALLESTA REMY, ASTRID | astrid.ballesta@udl.cat | 6 | |

Subject's extra information

"Horticultural crops" subject provides the necessary connections for the the degree looking at two different aspects. It complements the basic training that the students have been given to the "Horticulture" course and provide additional information on the connections to the production of edible vegetables. Complementarily, it provides information on the growth and production of ornamental plants. Finally, an introduction to beekeeping is given to students as another factor in fruit and vegetable production. It is intended that the student meets the particularities of the production process of the main horticultural crops, considered as a reference, and that he/she is able to apply these connections to other close species. Crops are presented in relation with their use with the aim of being able to apply the acquired knowledge to the analysis of production alternatives and to the resolution of problems suggested to a horticultural farm. About 10% of the content is related with crop protection. The student will be able to plan and manage a farm dedicated to the production of horticulture or ornamental plants.

It is recommended to take and correctly assimilate the "Horticulture" subject previously or the course.

Learning objectives

To know the morphology and physiology, as well as the needs of more representative vegetable and ornamental crops

To identify and evaluate the main production techniques applied to tehse species. To be able to apply all this knowledge to othe close species.

To get basic knowledge about bee keeping related with horticulture porduction

To provide tools to facilitate correct oral and written presentations, with practice.

To get practice in group work and cooperative work.

Competences

general competencies

CG7. Knowledge in basic, scientific and technological subjects that facilitate continuous learning, as well as an ability to adapt to new situations or changing environments.

CG8. Ability to solve problems with creativity, initiative, methodology and critical reasoning.

CG10. Ability to search for and use rules and regulations related to horticultural and ornamental production.

CG11. Ability to develop their activities assuming a social, ethical and environmental commitment in tune with the reality of the human and natural environment.

CG12. Ability to work in multidisciplinary and multicultural teams.

CG13. Correction in oral and written expression

CG15. Mastery of information and communication technologies

specific competencies

CEHJ1. Ability to know, understand and use the principles of: Technology of Fruit and Vegetable Production. Bases and technology of horticultural, fruit and ornamental propagation and production. Quality control of fruit and vegetable products. Marketing. Genetics and plant breeding.

CEHJ5. Ability to know, understand and use the principles of: Plant material: production, use and maintenance; Ecosystems and biodiversity; Physical environment and climate change.

Subject contents

PROGRAM

Part 1.- Vegetables production (36 h)

- 1.-Root vegetables: the carrot
- 2.-Bulb vegetables: the onion
- 3.-Stem vegetables: the asparagus
- 4.- Leaf vegetables: the lettuce and the chicory
- 5.- Flower vegetables: the cauliflower
- 6.- Fruit vegetables: the tomato
- 7.- Fruit vegetables: the melon
- 8.- Fruit vegetables: the strawberry
- 9.- **Seed** vegetables: the pea

Parte 2.- Ornamental plants production (18h)

- 10.- Technology of ornamental plants production
- 11- Production of cut flowers, flower pot plant, indoor plant

Parte 3.- Bee keeping (6h)

- 12.- Short introduction to bee keeping related with its importance in fruit and vegetables production

Practices activities:

Species and variety diversity in horticulture market. Repercussion in crop technology

Problems: data analysis, planning, variety selection, fertilization, legislative restrictions,different aspects related with horticultural production

Horticultural farm planning: nursery, rotations, seed calendar, harvest calendar, quality, simulation.

Technical documents redaction, cooperative work, oral presentations.

Vegetable producer visits.

Methodology

| Typo of activity | Description | Face-to-face activity student | Non-presential activity student | Evaluation | Total hours | Total hours | ECTS |
|-----------------------|------------------------------|---|---------------------------------|--|-------------|-------------|------|
| | | Objetives | Hours | | Hours | Hours | |
| Magistral lectures | Magistral lectures | Mains concepts explanatio | 40 | Study: to know, understand and syntetize knowledge | 55 | 3 | 3,9 |
| Problems and examples | Participative classes | Theoretical concepts explained during magistral lessons application | 12 | To solve problems and examples | 17 | 3 | 1.3 |
| Lab and/or fieldwor | Traning at lab and/ or field | Training: understand phenomenology, mesure, observe,.. | 8 | Rapport redation | 12 | | 0,8 |
| Total | | | 60 | | 84 | 6 | 6 |

Development plan

| Type of activity | Content | Objectives | Presential hours | Cumulated hours | Evaluation | |
|----------------------|--------------|------------|------------------|-----------------|------------|----------|
| | | | | | Theory | Problems |
| Magistral lectures | Topic 1-9 | 1, 2 | 22 | 22 | x | |
| Examples and problem | Topic 1-9 | 1, 2, 4, 5 | 6 | 28 | | x |
| Lab or field work | Topic 1-9 | 2, 5 | 2 | 30 | | x |
| Magistral lectures | Topic 10-12 | 1,2, 3 | 18 | 48 | x | |
| Examples and problem | Topic 10-11 | 2, 5 | 6 | 54 | | x |
| Lab or field work | Topics 10,12 | 1, 2, 4 | 6 | 60 | | x |
| Total | | | 60 | 60 | | |

Evaluation

| Activity | Evaluation activity | | Grading ratio % |
|----------------------------|--|--------|------------------------|
| | Evaluation system | Number | |
| Magistral lessons | Written exam about subject theory | 2 | 60 (30% for each exam) |
| Problems, examples and lab | Written delivery or oral expositions about labs, problems or example | 6 | 40 |
| Total | | | 100 |

Observacions

Continuous evaluation. Acquisition of theoretical and practical knowledge will be valued. Theory must be passed to pass the course. A 80% of attendance to classes is necessary to pass the subject as continuous evaluation. Theory will be evaluated by means of two partial controls. The subject will only be released if the grade obtained in each control is greater than or equal to 5. At the end of the four-month period, failed may be recovered.

Bibliography

Basic bibliography

Part 1.- Vegetables production

Chaux, Cl.; Foury, Cl. 1994. Production légumières. Tomes 1,2,3. Tec&Doc Lavoisier. Paris.

548,639 i 563 p.

Maroto, J.V. 2002. Horticultura herbácea especial. 5a Ed. Mundi-Prensa. Madrid. 702p.

Péron, J.Y. 2006. Productions légumières. 2nd ed. Ed Lavoisier. Paris. 613 p.

Tirilly, Y.; Bougeois, C.M. 2001. Tecnología de las hortalizas. Ed. Acribia. Zaragoza. 591 p.

Part 2.- Ornamental plant production

Boodley, J.; Newman S. 2009. The commercial greenhouse, 3rd Edition. Delmar Publishers.

Griffith, L. 2007. Tropical foliage plants. 2nd Ed. Ball Publishing

Ingels J. 2009. Ornamental horticulture. Sciences, operations and management. Centage Learning.

Li, Y; Pei, Y. 2007. Plant biotechnology in ornamental horticulture. CRC Press

Nelson, P. 2013. Geenhouse operation and management. Pearson New International Edition. Pearson.

Sain, S.M.; Ochatt, S.J. (Ed).. 2010. Protocols for in vitro propagation of ornamental plants. Edited by S. Mohan Jain, Sergio J. Ochatt.. Humana Press, Cop. New York : Springer.

Part 3.- Beekeeping

Prost, J. 20017. Apicultura. El manejo de la colmena. 4a Ed. Ed. Mundiprensa