Universitat de Lleida

DEGREE CURRICULUM

HORTICULTURAL CROPS

Coordination: BALLESTA REMY, ASTRID

Academic year 2020-21

HORTICULTURAL CROPS 2020-21

Subject's general information

<table>
<tr><td>Subject name</td><td>HORTICULTURAL CROPS</td></tr>
<tr><td>Code</td><td>102564</td></tr>
<tr><td>Semester</td><td>2nd Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
<table>
<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's Degree in Agricultural and Food Engineering</td><td>3</td><td>COMPULSORY</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>6</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
<table>
<tr><th>Activity type</th><th>PRACAMP</th><th>PRALAB</th><th>PRAULA</th><th>TEORIA</th></tr>
<tr><td>Number of credits</td><td>0.6</td><td>0.2</td><td>1.3</td><td>3.9</td></tr>
<tr><td>Number of groups</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>BALLESTA REMY, ASTRID</td></tr>
<tr><td>Department</td><td>HORTICULTURE, BOTANY AND LANDSCAPING</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>25 hours of total activities have been considered for one ECTS credit: 10 face-to-face hours and 15 independant student work</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Català: 100%</td></tr>
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HORTICULTURAL CROPS 2020-21

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. Complementarly, 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 abble 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 abble 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

Look at catalan version

Subject contents

PROGRAM

Part 1.- Vgetables production (36 h)

1.-Root vegetables: the carrot

2.-Bulb vegetables: the onion

3.-Stem vegetables: the asparragus

4.- Leave vegetables: the letuce and the chicorry

5.- Flower vegetabes: the coliflower

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.- Tecnology of ornamental plantas porduction

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 horticultura marquet. Repercution in crop technology

Problems: data analisis, planing, variety selection, fertilization, legislatives restrictions, ...different aspects related with horticultural production

Horticultural farm planing: nursery, rotations, seed calender, harvest calender, 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	
		Objetives	Hours		Student work	Hours	Hours	Hours	ECTS
Magistral lectures	Magistral lectures	Mains concepts explanatio	40		Study: to know, understand and syntetize knowledge	55	3	98	3,9
Problems and examples	Participative classes	Theoretical concepts explained during magistral lessons application	12		To solve problems and examples	17	3	32	1.3

Lab and/or fieldwor	Traning at lab and/ or field	Training: understand phenomenology, mesure, observe,..	8	Rapport redation	12		20	0,8
Total			60		84	6	150	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
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. Tecnologia 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