

Updated On	2024/02/07																																								
Curricular Year / Period	2023/24 / S2																																								
Course	Agronomy																																								
Curricular Unit	Horticulture and Fruticulture																																								
Language(s) of Instruction	Português Não aplicável.																																								
ECTS/tempo de trabalho (horas)	<table border="1"> <thead> <tr> <th rowspan="2">ECTS</th> <th rowspan="2">Total</th> <th colspan="9">Horas de contacto semestral</th> </tr> <tr> <th>T</th> <th>TP</th> <th>PL</th> <th>S</th> <th>TC</th> <th>E</th> <th>O</th> <th>OT</th> <th>EC</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>80</td> <td></td> <td>32</td> <td>16</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>T - Theoretical; TP - Theoretical and practical; LP - Laboratory Practice; S - Seminar; TG - Tutorial guidance; FW - Fieldwork; T - Training; ; EC - Clinical teaching; O* - Other hours typified as Clinical Training under the Directive 77/453/EEC of June 27, adapted by Directive 2005/36/EC.</p>										ECTS	Total	Horas de contacto semestral									T	TP	PL	S	TC	E	O	OT	EC	3	80		32	16						
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Teacher in charge (GDPR consent) <small>[complete name, email]</small>	Carlos Alberto Pinto Santana / csantana@ippportalegre.pt																																								
Prerequisites <small>[Curricular Units that must precede and specific entry competences]</small>	Not applicable.																																								
Learning outcomes <small>[Description of the overall and specific objectives] [Knowledge, skills and competences to be developed by students]</small>	<ol style="list-style-type: none"> 1. Know the productive position of the national fruit growing and horticulture, compared to the partners of the European Union and worldwide. 2. Know the structure, morphology and physiology of a fruit tree. 3. Understand the concept "degree-day", and relate it to the Phenological States of the fruit tree. 4. Know the fruiting habits of the various fruit trees and the importance of this knowledge to perform a correct pruning. 5. Know to plan the various phases of orchard and horticultural crop establishment, based on knowledge of the species' soil and climatic requirements, soil preparation, sowing or planting techniques. 6. Plan the implementation of the various agricultural operations included in the technical itinerary of an orchard in production, and of a horticultural crop, in particular soil tillage, pruning, irrigation, fertilization, pest control and crop diseases, and harvesting. 																																								
Sustainable Development Goals																																									
Syllabus	<p>FRUIT FARMING Structure and morphology of fruit plants; Concepts of Phenological State of fruit plants and «Degree-day»; Citrus, Plum tree, Peach / Nectarine, Cherry, Apricot tree, Pear tree / Apple Tree; Botany, growth, development and fruiting habits; Edofo-climatic requirements; Preparation of the ground to install the orchard; Choice the varieties and rootstocks; plant trees; Fertilization; Watering; Harvest; Pests and diseases of fruit trees, symptomatology and control.</p> <p>HORTICULTURE Main horticultural products in Portugal; Protected cultures; hydroponics cultivation; Autumn-Winter vegetables; Cultures studied: Turnip, Cabbage, Faba bean; Spring-Summer Vegetables; Cultures studied: Tomato, Watermelon, Melon, Potato, Lettuce; Edofo-climatic requirements; Materials used and cultural operations; Varieties; Sowing and transplantation (outdoor and greenhouse cultivation); Fertilization; Weed control; Watering; Pest and disease, symptomatology and control; Factors of Harmfulness; Harvest.</p>																																								
Teaching methodologies (including assessment) <small>[Specify the types of assessment and the weights and evaluation criteria]</small>	<p>1 - Teaching methodologies</p> <ul style="list-style-type: none"> - Theoretical-practical and practical-laboratory classes; - Practical work in the field, by conducting reports and seminars - Study visits to "model" farms. <p>The assessment is based on 3 components: 1). Written tests (60% of final grade) - 2 written partial tests and/or written exam; minimum grade 9,0 values</p>																																								

- 2). Oral Presentations / Seminar with PowerPoint (15% of final grade):
- on fruiting habits of a fruit tree;
 - on the monitoring of a fruit tree on an agricultural holding. Required to do to approve this UC.
- 3). Written Reports (25% of final grade):
- Follow-up of a fruit tree in an real orchard;
 - Bibliographical review about the importance of rootstocks, with research, for one species, search for rootstocks available in the market.
 - Reports of study visits made.

2 - Period assessment

The assessment is based on 2 components:

- 1). Written tests (60% of final grade) - 2 written partial tests (Part 1 - Fruit Farming, Part 2 - Horticulture); minimum grade 9,0 values
- 2). Written Reports (40% of final grade):
 - Bibliographical review about the importance of rootstocks, with research, for one species, search for rootstocks available in the market (15 % of final grade)
 - Follow-up of a fruit tree in an real orchard;

OR

- in the impossibility of the student to go to an orchard, the report should be illustrated with photos taken from a "photo base" available on the PAE platform for that purpose, or images resulting from own research.

(25% of final grade)

3 - Examination assessment

The assessment is based on 2 components:

- 1). Written exam (60% of final grade); minimum grade 9,0 values
- 2). Written Reports (40% of final grade):
 - Bibliographical review about the importance of rootstocks, with research, for one species, search for rootstocks available in the market (15 % of final grade)
 - Follow-up of a fruit tree in an real orchard;

OR

- in the impossibility of the student to go to an orchard, the report should be illustrated with photos taken from a "photo base" available on the PAE platform for that purpose, or images resulting from own research.

(25% of final grade)

Bibliography

1 - Main Bibliography

- GIL-ALBERT VELARDE, F. (1989). Tratado de arboricultura frutal: morfología y fisiología del árbol frutal. Vol. I. Ed. Mundi-Prensa, Madrid.
- GIL-ALBERT VELARDE, F. (1989). Tratado de arboricultura frutal: Técnicas de plantación de especies frutales. Vol. III. Ed. Mundi-Prensa, Madrid.
- GIL-ALBERT VELARDE, F. (1995). Tratado de arboricultura frutal: Técnicas de mantenimiento del suelo en plantaciones frutales Vol. IV. Ed. Mundi-Prensa, Madrid.
- GIL-ALBERT VELARDE, F. (2003). Tratado de arboricultura frutal: Poda de frutales Vol. V. Ed. Mundi-Prensa, Madrid.
- MANUAL DE FERTILIZAÇÃO DAS CULTURAS (2000). INIA-LQRS, Lisboa.

2 - Complementary Bibliography

- MESSIAEN, C. M.et al. (1995). Enfermedades de las Hortalizas. Ediciones Mundi-Prensa. Barcelona.
- OGAWA, J. M., RITCHIE, D. F., ZEHAR, E. I., URIU, K., BIRD, G. W. & UYEMOTO, J. K. (2000). Plagas y enfermedades de los frutales de hueso. The American Phytopathological Society. Ed. Mundo-Prens. Madrid.

Special Situations

[Students with special status]

1 - Period assessment - Students with special status

All students must have a minimum of 75% attendance of teaching-learning activities, to be approved on this curricular unit. This rule excludes student workers, military students or others with special status, by virtue of the legislation.

All students should complete, with a grade higher than 9,5 values, the Report on the Monitoring of a fruit tree on an agricultural holding, to obtain approval in this curricular unit.

2 - Examination assesement - Students with special status

All students must have a minimum of 75% attendance of teaching-learning activities, to be approved on this curricular unit. This rule excludes student workers, military students or others with special status, by virtue of the legislation.

All students should complete, with a grade higher than 9,5 values, the Report on the Monitoring of a fruit tree on an agricultural holding, to obtain approval in this curricular unit.
