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| Course Unit | Sustainable Mediterranean Fruit Growing | Field of study | Agricultural and Animal Production |
| Master in | Agroecology | School | School of Agriculture |
| Academic Year | 2023/2024 | Year of study | 1 |
| Type | Semestral | Semester | 2 |
| Level | 2-1 | ECTS credits | 6.0 |
| Code | 6348-747-1201-00-23 | | |
| Workload (hours) | 162 | Contact hours | T 30 TP - PL 30 TC - S - E - OT 4 O - |

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Albino António Bento

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Know the national and international legislation, current programs of conservation for bush and tree species;
2. Know the theoretical basis of conservation for bush and tree species and to be able to apply methods and techniques of conservation;
3. Know the agronomic characteristics of traditional and commercial cultivars of bush and tree species.
4. Manage the fruit production systems from an agroecological point of view. Recognize the effect of the different cultural techniques on quality and productivity.
5. Integrated management of production and production factors to lead to a regular and sustainable production, both for the producer and environment, of productive and quality potential of the orchard.
6. Develop and to apply models of the productive potential of the orchard.
7. To implement practices to play down the impacts on the environment.
8. To know the specific requirements of harvest, handling, transport and storage.

Prerequisites

Before the course unit the learner is expected to be able to:
Students should have knowledge of arboriculture.

Course contents

Study of diversity and conservation of shrub and tree species. Study of different shrub and tree species in an agroecological perspective, giving examples of traditional and commercial varieties and agronomic characteristics.

Course contents (extended version)

1. Variety and conservation of bush and tree species:
 - Criteria of assessment of threatened cultivars/species.
 - Risk factors.
 - Harvest and storage of germ plasm banks.
2. Agroecological production of bush and tree species. Traditional / commercial cultivars.
3. Fruit production from an agroecological point of view:
 - implantation of the orchard,
 - rootstocks,
 - cultivars and more suitable training systems from a sustainable point of view.
4. Cultivar and sanitary certification.
5. Agroecological management of the production system:
 - effect of cultural techniques, on quality, productivity and sanity.
 - Problems of replant trees.
6. Modelling of the production:
 - optimum crop load;
 - assessment of the productive potential of the orchard;
 - assessment of the potential growth of the fruit.
7. Harvest and post-harvest technology:
 - Respiratory metabolism and physiological responses to the changes on the atmosphere composition.
 - Physiological disorder. Postharvest decay.
 - Storage.
 - Packing.
8. The market of fruit products.

Recommended reading

1. Rena Martins Farias, 2006. Estratégia para missões sistemáticas de colheita de espécies vegetais para conservação ex situ
2. J. E. M. Ferrão, 2002. Fruticultura tropical: espécies com frutos comestíveis. Instituto de Investigação Científica Tropical.
3. Velard, F. G. A. 1989. Tratado de Arboricultura Frutal, Vol II. Mundi-Prensa. 236 pp.
4. Bretaudeav, J. 1990. Atlas d'Arboriculture fruitière, Vol IV, J. B. Bail Ed. Paris 263 pp.
5. Michel Gautier, 2001. La culture fruitière. Paris Editions Tec & Doc, 2001.

Teaching and learning methods

Lectures: Explanatory methodology, using the media. The participation of students is encouraged with placement of issues and presentation / discussion of cases. Laboratory classes: Laboratorial and field work with development of one or more reports using the bibliography of speciality. Oral presentation of a report.

Assessment methods

1. Alternative 1 - (Regular) (Final)
 - Final Written Exam - 70%
 - Practical Work - 30%
2. Alternative 2 - (Student Worker) (Supplementary, Special)
 - Final Written Exam - 100%

Language of instruction

Portuguese

Electronic validation

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|----------------------|------------------------------|------------------------------|-----------------------------------|
| Albino António Bento | José Alberto Cardoso Pereira | Manuel Ângelo Rosa Rodrigues | José Carlos Batista Couto Barbosa |
| 23-01-2024 | 24-01-2024 | 25-01-2024 | 26-01-2024 |