

Course Unit	Plant biotechnology		Field of study	Biology and biochemistry/Manufacturing Industries	
Bachelor in	Biology and Biotechnology		School	School of Agriculture	
Academic Year	2022/2023	Year of study	2	Level	1-2
Type	Semestral	Semester	2	ECTS credits	6.0
			Code	9029-510-2202-00-22	
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) Jaime Camilo Afonso Maldonado Pires, Luís Manuel Cunha Santos

Learning outcomes and competences

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

1. Know the importance of biotechnology in the production and processing of plant products.
2. Understand the role of biotechnology in plant propagation.
3. Recognize the role of pests and plant diseases in agriculture and the use of biotechnology as diagnostic tool.
4. Understand how biotechnology operates at the technological processing and quality of products.

Prerequisites

Before the course unit the learner is expected to be able to:
Skills of the area of biology.

Course contents

Importance of biotechnology in the production and technology of vegetable products. Biotechnology in plant propagation. Biotechnology in plant pathology. Biotechnology in the industrial processing of vegetable products.

Course contents (extended version)

1. Importance of biotechnology in the production and technology of vegetable products.
 - General characteristics of different crops production
 - Geographic and economic expression, situation and perspectives
2. Biotechnology in plant propagation.
 - Seed production technology
 - Different forms of propagation of plants
3. Biotechnology in plant pathology.
 - Concepts of pests, diseases and causal agents
 - Biotechnology in the defense against the enemies of plants
 - Biotechnology as a diagnostic technique of pests and diseases.
4. Biotechnology in the industrial processing of vegetable products.
 - Production of wines and spirits
 - Table olives, olive oils and vegetable oils
 - Processing of vegetables, fruits and cereals
 - Use of vegetable by-products

Recommended reading

1. Agrios N. G. (1998) Plant Pathology, Academic Press. 4ª Edição.
2. Fox R. T. V. (1993) Principles of Diagnostic Techniques in Plant Pathology. International Mycological Institute. Surrey, U. K.
3. Pineda de las Infantas M. T. S. (2004) Procesos de Conservación Poscosecha de Productos Vegetales. 1ª Edición, A. Madrid Vicente, Ediciones. Madrid.
4. Hoseney R. C. (1991) Principios de Ciencia y Tecnología de los Cereales, Editorial Acribia, S. A.
5. Jackson R. S. (1994) Wine Science. Principles and Applications. Academic Press. California U. S. A.

Teaching and learning methods

Theoretical content of exposure through PowerPoint presentations. Application of theoretical concepts. Laboratory classes with experimental protocols.

Assessment methods

1. Final written exam - (Regular, Student Worker) (Final, Supplementary, Special)
 - Final Written Exam - 100% (Final theoretical and practical written exam.)
2. Intermediate written tests, 2x50% - (Regular, Student Worker) (Final)

Language of instruction

Portuguese

Electronic validation

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06-12-2022	15-12-2022	16-12-2022	16-12-2022