Study Plan

School: School of Sciences and Technology
Degree: Master
Course: Olive Cultivation and Olive oil (cód. 249)

1st Year - 1st Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
BIO09180M	Olive Tree Morphology and Physiology	Biology	5	Semester	130
FIT09181M	Plant Material and Breeding	Agronomy	3	Semester	78
FIT09182M	Olive Grove Planting	Agronomy	5	Semester	130
FIT09183M	Olive Grove Growing	Agronomy	5	Semester	130
ERU09184M	Soil Mantainance	Rural Engineering	4	Semester	104
ERU09185M	Fertilisation and Irrigation	Rural Engineering	5	Semester	130
FIT09186M	Integrated Pest Management I	Agronomy	3	Semester	78

1st Year - 2nd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
FIT09187M	Integrated Pest Management II	Agronomy	5	Semester	130
ERU09188M	Olive harvesting and logistic	Agronomy	4	Semester	104
FIT09189M	Oil Millers and Olive Oil Technology	Food Engineering	6	Semester	156
FIT09190M	Olive Technology	Food Engineering	5	Semester	130
ERU09191M	Waste management technologies	Rural Engineering	4	Semester	104
FIT09192M	Sensorial Analysis	Food Engineering	3	Semester	78
GES09193M	Marketing	Management	3	Semester	78

2nd Year - 3rd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
FIT09194M	Research Seminar	Agronomy Food Engineering	5	Year	130
Dissertation					

2nd Year - 4th Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Dissertation					

Conditions for obtaining the Degree:

*** TRANSLATE ME: Para aprovação na componente curricular é necessário a aprovação (através de avaliação ou creditação) das seguintes unidades curriculares: {\}newline

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1º Semestre: {\}newline

7 UC obrigatórias num total de 30 Ects{\}newline

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2º Semestre: {\}newline

7 UC obrigatória num total de 30 Ects{\}newline

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3º Semestre: {\}newline

1 UC obrigatória num total de 5 Ects{\}newline

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Para obtenção do grau, é necessário também a aprovação em Dissertação no total de 55 ECTS, no 3.º e 4.º Semestre. {\}newline

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Program Contents

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Olive Tree Morphology and Physiology (BIO09180M)

1. External Morphology of the Olive Tree
1.1. The Root
1.2. The Stem
2. The Anatomy and Histology of the Olive Tree
2.1. Plant cell: main characteristics
2.1.1. Cell growth and the primary and secondary cell walls
2.1.2. The diverse types of plant tissues
2.2. The development the olive tree: from seed to mature tree (primary and secondary growth)
2.3. Histology and Anatomy of plant organs : root; stalk; leaves; flower; fruit
3. Physiology of the olive tree : The Water Relations (absorption, transport and transpiration); The Mineral Nutrition; The Balance of Carbon (photosynthesis and respiration) and the distribution of assimilates;
The Control of Development (hormones, tropisms, photoperiodism, thermoperiodism and vernelization).
4 The phenological cycle of the olive tree; Flowering, pollination and fertilization; The development, maturation and abscission of fruits
5. Response of olive trees to various types of stress:. drought, salinity, temperature, waterlogging.

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Plant Material and Breeding (FIT09181M)

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Olive Grove Planting (FIT09182M)

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Olive Grove Growing (FIT09183M)

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Soil Mantainance (ERU09184M)

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Fertilisation and Irrigation (ERU09185M)

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Integrated Pest Management I (FIT09186M)

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Integrated Pest Management II (FIT09187M)

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Olive harvesting and logistic (ERU09188M)

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Oil Millers and Olive Oil Technology (FIT09189M)
All virgin olive oil technological process will be studied.
Physico-chemical basis of all process will be reviewed and several different technologies to obtain virgin olive oil will be focused.
Quality and process control will be emphasized.
Criteria to make a project in order to install an oil press will be providing.
The influence of virgin olive oil consumption and human health will be presented.

Module 1 - Preliminary operations. Process production.
Module 2 - Control process and storage.
Module 3 - Quality. Package.
Module 4 - Visits to press industries.
Module 5 - Industrial projects.
Module 6 - Olive oil benefits for human health. The olive oil role in Mediterranean diet context.

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Olive Technology (FIT09190M)

1 – World olive production statistical data.
2 – Technology of green olives preservation
3 – Technology of black olives preservation
4 - Others technologies for olive preservation
5 – Olive nutritional value
6 – Project (olive preservation plant)

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Waste management technologies (ERU09191M)

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Sensorial Analysis (FIT09192M)

General considerations:
The senses in sensory analysis. The physiology of the senses. The aroma, taste and texture. Sensory analysis vs sensory evaluation. The importance and usefulness of sensory analysis. The errors in sensory analysis.
Characteristics of a test room and facilities necessary for conducting sensorial tests.
The different types of sensory tests: analytical test versus hedonic tests. Sheets proof for sensory analysis. Statistical treatment of data.
The panels: criteria for selection and training of assessors.
Organoleptic characteristics of olive oil:
The positive characteristics (attributes) and defects of the olive oils and their relationship with technology. The terminology used in olive oil sensory analysis.
Organoleptic characteristics of olives and other products (olive pates): the positive characteristics and defects and the relationship with technology. The terminology used in olives sensory analysis.

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Marketing (GES09193M)

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Research Seminar (FIT09194M)

This curricular unit was created to allow students having a support on the elaboration of their master thesis during the 2nd year of the Master in Olive and Olive Oil Production.
Tutorial sections include:
-debates on subjects which can be used to prepare a master thesis and on its organization and contents;
-presentation of the thesis evolution along the year if possible with the presence of the student adviser.
-special sections with invited speakers.