Study Plan

School: School of Sciences and Technology
Degree: Master
Course: Viticulture and Oenology (cód. 136)

1st Year - 1st Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
GES07357M	Wine Marketing	Management	4	Semester	104
BIO07358M	Vine Physiology	Agronomy Biology	5	Semester	130
FIT07359M	Vineyards Planting Material	Agronomy	4	Semester	104
QUI07360M	Microbiology of fermentation	Biochemistry Chemistry	5	Semester	130
FIT07361M	Soils, Installation and Maintenance	Agronomy	5	Semester	130
FIT07362M	Winemaking Technologies	Agronomy Food Engineering	5	Semester	130

1st Year - 2nd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
FIT07363M	Stabilisation and Packaging	Agronomy Food Engineering	5	Semester	130
FIT07364M	Vineyards Diseases and Pest Control	Agronomy	5	Semester	130
QUI07365M	Oenological Chemistry and Biochemistry	Chemistry	5	Semester	130
FIT07366M	Plant Training Systems	Agronomy	5	Semester	130
FIT08079M	Vineyard/Winery Traineeship	Agronomy Food Engineering Water Resources Engineering Rural Engineering	12	Semester	24

2nd Year - 3rd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
ERU07353M	Wineries and Equipments	Engineering	5	Semester	130
FIT07354M	Quality Control and Sensorial Analysis	Food Engineering	4	Semester	104
ERU07355M	Mechanisation and Precision Viticulture	Engineering	5	Semester	130
FIT07356M	Table Grapes and Raisin Production	Agronomy	4	Semester	104

2nd Year - 4th Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Mandatory alternatives					

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Internship					
Project Work					
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

6 UC obrigatórias num total de 28 Ects{\}newline

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2º Semestre:{\}newline

5 UC obrigatórias num total de 32 Ects{\}newline

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3º Semestre:{\}newline

4 UC num total de 18 Ects{\}newline

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Para a obtenção do grau é necessária a aprovação na Dissertação ou Estagio ou Trabalho de Projecto, no 4º semestre com o total de 42 ECTS{\}newline

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Wine Marketing (GES07357M)

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Vine Physiology (BIO07358M)

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Vineyards Planting Material (FIT07359M)

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Microbiology of fermentation (QUI07360M)

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Soils, Installation and Maintenance (FIT07361M)

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Winemaking Technologies (FIT07362M)

Grape berry composition: changes in berry composition during ripening, the harvest decision
The winemaking process: grape and must processing, juice treatment and juice additions
Vinification of white wines hiperoxigenation, oak barrels fermentation, pré-fermentativa maceration
Vinification of roses wines
Vinification of red wines thermovinification, thermoflash maceration, carbonic maceration, fermentation on the skins, rotary tanks
Special vinification: sparkling wines, sweet wines
Chemical analysis of musts and wines

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Stabilisation and Packaging (FIT07363M)

Wine clarity: natural settling, finning process, conditions and agents.
Filtration and centrifugation of wines: teorical concepts, type of filters
Wine stability chemical instability of wines (tartaric, proteins, colour, metallic). The use of temperature as a treatment.
Aging process: influence on wine characteristic, the effect of oxygen, the microxigenation technique.
The use of wood in winemaking: oak barrels, steaves…
Packing, bottling and closures: the use of cork.

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Vineyards Diseases and Pest Control (FIT07364M)

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Oenological Chemistry and Biochemistry (QUI07365M)

Chemical characterization of grapes and wines: organic acids, sugar compounds, alcohols, nitrogen compounds, phenolic compounds, aromatic compounds and minerals.
Compound evolution and transformations during winemaking and wine aging.
Enzymatic transformations and oxidation processes occurring in musts and wines.
The role of enzymes and its use in oenology.
Chemical and biochemical aspects of wine instability.
Colloids and colloidal phenomena occurring in wines.
The chemistry of alcoholic and malolactic fermentations.
Analytical methodology used for identifying different chemical compounds in grapes and wines. Gas chromatography and liquid chromatography coupled to mass spectrometry.

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Plant Training Systems (FIT07366M)

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Vineyard/Winery Traineeship (FIT08079M)

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Wineries and Equipments (ERU07353M)

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Quality Control and Sensorial Analysis (FIT07354M)
1. The concept of quality. Application and
organization of a quality control plan.
Identification of critical control points in a winery.
Statistical methods for quality control.
2. The senses in sensorial evaluation. The taste
and smell. Facilities and sample preparation.
Discrimination, descriptive and affective tests.
The panellists. Wine characteristics and
defectives. Statistical analysis of sensory data.

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Mechanisation and Precision Viticulture (ERU07355M)

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Table Grapes and Raisin Production (FIT07356M)