



# UNIVERSITÀ DEGLI STUDI DI PALERMO

<b>DEPARTMENT</b>	Scienze Agrarie, Alimentari e Forestali		
<b>ACADEMIC YEAR</b>	2020/2021		
<b>BACHELOR'S DEGREE (BSC)</b>	VITICULTURE AND OENOLOGY		
<b>INTEGRATED COURSE</b>	VINEYARD MANAGEMENT - INTEGRATED COURSE		
<b>CODE</b>	13750		
<b>MODULES</b>	Yes		
<b>NUMBER OF MODULES</b>	2		
<b>SCIENTIFIC SECTOR(S)</b>	AGR/08, AGR/03		
<b>HEAD PROFESSOR(S)</b>	PISCIOTTA ANTONINO	Professore Associato	Univ. di PALERMO
<b>OTHER PROFESSOR(S)</b>	PAMPALONE VINCENZO	Professore Associato	Univ. di PALERMO
	PISCIOTTA ANTONINO	Professore Associato	Univ. di PALERMO
<b>CREDITS</b>	9		
<b>PROPAEDEUTICAL SUBJECTS</b>			
<b>MUTUALIZATION</b>			
<b>YEAR</b>	3		
<b>TERM (SEMESTER)</b>	2° semester		
<b>ATTENDANCE</b>	Not mandatory		
<b>EVALUATION</b>	Out of 30		
<b>TEACHER OFFICE HOURS</b>	<b>PAMPALONE VINCENZO</b>		
	Tuesday	09:00 - 11:00	Studio docente, identificativo 13, Edificio 4, ingresso E- Dipartimento SAAF e Piattaforma Teams
	Wednesday	09:00 - 11:00	Studio docente, identificativo 13, Edificio 4, ingresso E- Dipartimento SAAF e Piattaforma Teams
	Friday	11:00 - 13:00	Sede del corso di Studi in Viticoltura ed Enologia e Piattaforma Teams.
	<b>PISCIOTTA ANTONINO</b>		
	Monday	09:00 - 13:00	Sede del Corso di Laurea in Viticoltura ed Enologia
	Tuesday	09:00 - 13:00	Sede del Corso di Laurea in Viticoltura ed Enologia

<b>PREREQUISITES</b>	The student must have basic knowledge to understand the content and the learning objectives of the teaching. In particular, in coherence with the propedeuticity, the knowledge of biology, general arboriculture and viticulture contained in the expected learning outcomes of the preparatory courses to this teaching. In addition, the knowledge gained in the previous school path, in accordance with the initial training anticipated by the Study Course, will be fundamental prerequisites.
<b>LEARNING OUTCOMES</b>	Consistent with what the relevant Dublin descriptors defined by the CdS in Viticulture and Oenology, the discipline aims to enable the graduate to manage the vineyard system in different areas. Specifically, regarding the field of activity that is called upon to respond at the end of the learning process, the student must be able to choose the most appropriate technique for achieving a predetermined productive goal. Therefore, he / she must know the genotype-environmental-management interactions. In order to preserve or improve production capacity, the graduate must be able to choose and apply the management technique in harmony with the environmental and production characteristics. It must achieve the skills and competences in the dissemination of the acquired knowledge in order to conduct a vineyard with reference to all the choices of the techniques suitable for obtaining excellent and economically production results. It will have the capacity to expose the results and to motivate crop choices in terms of production and quality objectives. It will be able to support the importance and highlight the impacts both from a productive and environmental point of view. The training objective achieved will be evaluated through on-the-job tests that envisage the application of the main vineyard management techniques in the field. Acquired practical skills relate to the ability to recognize and organize autonomously basic information for formulating choices of basic techniques for vineyard planting and vineyard management (analysis of environmental vocation, varietal choices and Plant and crop management systems).
<b>ASSESSMENT METHODS</b>	<p>The way in which the actual acquisition by students of expected learning outcomes is verified is an oral test</p> <p>The oral test consists of a colloquium aimed at ensuring the possession of the competences and the disciplinary knowledge provided by the course, the ability to contextualize and expose; The evaluation is expressed in thirtieths.</p> <p>The inputs (both open and semi-structured and specifically designed to test the expected learning outcomes) will tend to verify (a) the acquired knowledge; B) processing capabilities; (C) possession of adequate exhibition capacity.</p> <p>A) As far as knowledge verification is concerned, the ability to establish connections between the contents (theories, models, tools, etc.) of the course will be required.</p> <p>(B) As far as the processing capacity is concerned, at least one of the following three objectives shall be indicated:</p> <p>B1) provide independent judgments about disciplinary content;</p> <p>B2) understand the applications or their implications in the discipline;</p> <p>B3) place disciplinary content within the professional, technological or sociocultural context of reference.</p> <p>The maximum score is obtained if verification ensures full possession of the following three aspects: a judgmental ability that can represent emerging and / or unexplored aspects of discipline; A strong ability to represent the impact of the contents of the course within the sector / discipline in the</p> <p>What content they subscribe; Finally, mastering the ability to represent innovative ideas and / or solutions within the professional, technological context of reference.</p> <p>As far as the display capacity is concerned, there is a minimum rating (18/30) if the examination shows a language property that is appropriate to the reference context but this is not sufficiently articulated, while the maximum rating ( 30/30) can be achieved by those who demonstrate full mastery of the sectoral language as well.</p>
<b>TEACHING METHODS</b>	Teaching includes 60 hours of activities organized in frontal classroom lessons and practical exercises in experimental fields. For frontal lessons the teacher uses slides and presentations that are available for students. Technical visits are also carried out at wine-growing companies and experimental fields

## MODULE WINE-GROWING TECHNIQUE

*Prof. ANTONINO PISCIOTTA*

### SUGGESTED BIBLIOGRAPHY

AAVV, Manuale di Viticoltura - (a cura di Matteo Marengi), Edagricole, Bologna, 2005.  
 Manuale di Viticoltura (Pallioti A., Poni S., Silvestroni O.), Edagricole, Bologna, 2018.  
 Avversita' non parassitarie della vite e cambiamento climatico (Pallioti A., Poni S., Silvestroni O.), Edagricole, Bologna, 2019.  
 M. Fregoni, Viticoltura di Qualita, Tecniche Nuove, III Edizione – 2013.  
 AAVV, La vite ed il vino, Coltura e cultura- (Bayer CropScience) - 2007.  
 AAVV Progressi in Viticoltura, (a cura di Maurizio Boselli), Edises, Napoli, 2016

<b>AMBIT</b>	50125-Discipline della produzione vegetale
<b>INDIVIDUAL STUDY (Hrs)</b>	90
<b>COURSE ACTIVITY (Hrs)</b>	60

### EDUCATIONAL OBJECTIVES OF THE MODULE

The Viticulture Technique teaching has the general purpose of contributing, together with the teachings of General Arboriculture and Viticulture, to provide the theoretical and application knowledge required for the management of "vineyard systems" in relation to the different productive objectives.

Many topics as interactions among cultivar, environment, and management will be discussed; Vineyards management of winter and green pruning, source-sink ratios, vegetative-reproductive ratio in relation to varietal needs and production, as well as irrigation management, fertilization management and soil in vineyard systems.

The acquired training will enable them to operate within the skills provided for the professional in the field of consultancy in wine-growing companies, with particular reference to the variety choice, the vineyard plantation and its management.

Teaching is divided into frontal and practical lessons. The latter is carried out at the experimental fields managed by the Department of Agricultural, Food and Forestry Sciences. Finally, supplementary lessons are provided on specific topics.

## SYLLABUS

Hrs	Frontal teaching
10	Irrigation. General aspects: assessment of availability and philosophy of using water in viticulture. Usable techniques, limitations, and necessities. timing of irrigation and effects on wine production and quality
10	Soil management techniques: tillage and cover crop. Objectives and effects on the vegetative-reproductive balance of the vine and the quality of the wine.
10	Vineyard Fertilization: nutrients requirement. Assessments of environmental, viticultural and oenological variables for the implementation of fertilization. Types of fertilization, organic and mineral. Timing of fertilization and effects on vine and grape quality.
12	Canopy management techniques during summer. Decisional criteria, timing, and intensity. Effects of canopy management techniques on yield and grape quality. Choice of the optimal harvest time in relation to the oenological target and cultivar. Methods to characterize the optimal harvest time. Harvest methods.
Hrs	Practice
18	Technical visits and practice in vineyards.

## MODULE IRRIGATION PLANTS

*Prof. VINCENZO PAMPALONE*

### SUGGESTED BIBLIOGRAPHY

Fondamenti di idraulica – tratti da Appunti sinottici delle lezioni di “Irrigazione e drenaggio” prof. D. Pumo  
 “Progettazione e gestione degli impianti di irrigazione”, A.Capra, B.Scicolone, EDAGRICOLE  
 Appunti e diapositive delle lezioni del docente

<b>AMBIT</b>	10689-Attività formative affini o integrative
<b>INDIVIDUAL STUDY (Hrs)</b>	45
<b>COURSE ACTIVITY (Hrs)</b>	30

### EDUCATIONAL OBJECTIVES OF THE MODULE

The course aims to provide students with knowledge and professional skills on the optimal design of micro-irrigation systems. After analyzing the various components of drop irrigation systems (dispensers, pipes, fittings, automation systems, pumping plants, filtration plants, etc.) and their technical characteristics, the design and efficiency evaluation criteria used in practice are presented. In the final part of the course, students are guided in the dimensioning of plant-type and in the drafting of their design work.

## SYLLABUS

Hrs	Frontal teaching
20	<p>(3) Basics of hydraulics            Hydrostatic and Hydrodynamic Hints; Tracking piezometric and total loads lines; Simple pipe: calculation or verification procedures of a pipe; Pipe with the distribution along the path.</p> <p>(1) Pump installations            Prevalence, power, maximum flow, characteristic curves of a pump; Types of pumps; Description of a lifting system; Dimensioning of a lifting system; Choice of engine-pump system.</p> <p>(1) Soil hydrology            Physical properties of the soil. Water in the soil: potential of water in the soil; Hydrological parameters of the soil, characteristic curves; Water movement in the soil; Measurement of parameters and measurement equipment. Estimation in field and analytical of wet bulb.</p> <p>(1) Water quality for irrigation            Water Quality Parameters: Salinity, Sodium; Criteria for assessing suitability.</p> <p>(3) Localized irrigation: general            Local irrigation systems, advantages and disadvantages; Plant schemes and materials. Dispensing devices: laminar flow, turbulent, vortex, self compensating, hoses. Law of dispensation, determination of the x flow exponent; Temperature influence.</p> <p>(3) Micro-irrigation system: the net and dispensers            Distribution network tracking criteria: side, head, secondary and main pipe. Distribution of pressures along the net; Soil slope influence on pressures; Detergent quality, occlusion; Uniformity of supply.</p> <p>(2) Micro-irrigation system: accessory works            Accessory and completion works: filtration systems; Chemical treatments; Industry equipment; fertigation; automation; Material degradation.</p> <p>(6) Micro-irrigation system: the project            Project of a plant: determination of project parameters; Division into sectors; Choice and arrangement of the wings and the net; Proportionality of: manifold and lateral; Main pipe in case of supply from lifting plant or storage tank; Plant automation systems; Provision of equipment in the network; Plant maintenance; Installation and operation costs.</p>
Hrs	Practice
10	Exercices on the topics faced during the course