



# 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>	AGRICULTURAL SCIENCES AND TECHNOLOGIES
<b>SUBJECT</b>	TREE FARMING
<b>TYPE OF EDUCATIONAL ACTIVITY</b>	B
<b>AMBIT</b>	50125-Discipline della produzione vegetale
<b>CODE</b>	02078
<b>SCIENTIFIC SECTOR(S)</b>	AGR/03
<b>HEAD PROFESSOR(S)</b>	MARRA FRANCESCO Professore Ordinario Univ. di PALERMO PAOLO
<b>OTHER PROFESSOR(S)</b>	
<b>CREDITS</b>	9
<b>INDIVIDUAL STUDY (Hrs)</b>	149
<b>COURSE ACTIVITY (Hrs)</b>	76
<b>PROPAEDEUTICAL SUBJECTS</b>	
<b>MUTUALIZATION</b>	
<b>YEAR</b>	2
<b>TERM (SEMESTER)</b>	1° semester
<b>ATTENDANCE</b>	Not mandatory
<b>EVALUATION</b>	Out of 30
<b>TEACHER OFFICE HOURS</b>	<b>MARRA FRANCESCO</b> <b>PAOLO</b> Monday 09:00 11:00 Sede polo decentrato di Caltanissetta Tuesday 09:00 13:00 Ed. 4 H PT-98 Thursday 09:00 13:00 Ed. 4 H PT-98

DOCENTE: Prof. FRANCESCO PAOLO MARRA

<b>PREREQUISITES</b>	Knowledge of Botany and General Agronomy are strongly suggested
<b>LEARNING OUTCOMES</b>	Knowledge and ability to understand: The student shall acquire the knowledge related to the morphological-functional and technical-scientific principles at the base of the cultivation of tree plants in general. He/she shall understand the concepts of the "tree plant system" and the "arboretum" system. He/she shall identify the peculiarities of the main tree species of relevant agronomic interest and acquire the necessary skills for their technical management. Ability to apply knowledge and understanding: Ability to evaluate the different relationships that link the individual components and the interrelations that run between the "tree" and the "arboretum" systems, according to a holistic approach mainly aimed at the production aspects and the global quality of the main fruit tree species. Autonomy of judgment: Be able to suggest, in relation to the environmental conditions of cultivation, the adoption of suitable plant material and technical solutions to manage, and eventually improve, the quantitative-qualitative aspects of tree production. Communication skills Being able to use a technically correct but simple language, in directing the fruit tree growers in the technical choices able to configure and manage fruit tree orchard systems. Learning skills: To acquire the ability to connect the different factors (genetic, environmental and technical-cultural) that influence as a whole the tree production adapting itself to the most updated knowledge through the consultation of technical-scientific material
<b>ASSESSMENT METHODS</b>	The examination shall consist of oral questions, with an optional in itinere test (written) during the lesson break period based onto the topics carried out as scheduled until that period (namely General Arboriculture). The intermediate test is organized in the form of structured written tests (multiple choice test, true/false etc.) with about thirty questions in total. The time available for the written test is 1 hour. At the end of the intermediate exam, a judgment will be assigned. This judgment will be considered at the limit of sufficiency with at least 18 correct answers out of 30. This assessment will be taken into account for the vote that will be awarded at the end of the final examination. The topics for final examination are primarily those carried out in the second half of the semester, in the case of participation in the intermediate exam with positive results, or those carried out in the entire semester, if the intermediate exam has not been carried out or has been carried out with unsatisfactory results. In the case of a positive result achieved in the intermediate exam, the examiner must answer a minimum of three questions posed orally, on the parts covered by the program. In the case of a final single exam, the student will have to answer a minimum of six oral questions, on all the parts covered by the program. Voting will be awarded at the end of the oral examination. The verification processes (written and oral) aim to evaluate if the student has knowledge and understanding of the main topics; has acquired interpretative competence and autonomy of judgment of concrete cases, as well as mastery of language and technical problems. The threshold of sufficiency will be reached when the student shows knowledge and understanding of the topics at least in general guidelines and have sufficient applicative skills in order to resolve specific cases; he/she must also possess argumentative capacities to allow the transmission of his / her knowledge to the examiner. Below this threshold, the examination will be insufficient. The more, instead, the examining with his argumentative and expositive abilities manages to interact with the examiner, and the more his knowledge and applicative skills go into the detail of the discipline being tested, the more the vote that will be awarded. It will be particularly appreciated the ability to link the topics of General Arboriculture's part with the applications related to the part of Special Arboriculture. The evaluation is expressed in thirtieths (min 18/30 -max 30/30)
<b>EDUCATIONAL OBJECTIVES</b>	The aim of the course is to train students on the morphological-functional and technical-scientific principles at the base of the cultivation of tree plants in general with practical references to case studies related to fruit culture. The specific purpose of the course is, therefore, the study of the 'Single Fruit tree' system and the 'fruit tree orchard' system. In particular, we will analyze the different relationships within each system that link the individual components and the interrelations that run between the two systems, according to a holistic approach aimed at analyzing the responses of the two systems to cultural interventions according to the genotypes and environments cultivation chosen. Through a schematic and vertical analysis of the peculiar aspects inherent to the different tree species of fresh and dry fruit, the student shall acquire the most appropriate technical and application knowledge for the technical project phase and for the cultivation management of a fruit tree orchard
<b>TEACHING METHODS</b>	Frontal lessons, Exercises in the laboratory, Seminars, Field Visits. The aforesaid activities' are organized in order to facilitate the attainment of the expected results of learning
<b>SUGGESTED BIBLIOGRAPHY</b>	PER LA PARTE di ARBORICOLTURA GENERALE: - S. Sansavini (a cura di) – Arboricoltura Generale. Patron Editore, 2012 - E. Baldini - Arboricoltura Generale. CLUEB, 1986. PER LA PARTE DI

ARBORICOLTURA SPECIALE (oltre al materiale fornito dal Docente): - Sansavini S., Ravalli L. Manuale di Ortofrutticoltura, Edagricole. 2012 - Branzanti e Ricci – Manuale di Frutticoltura, Edagricole PER APPROFONDIMENTI: - M. Faust - Physiology of temperate zone fruit trees. J. Wiley & Sons, N.Y., 1989. - K. Ryugo - Fruit culture: its Science and art. J. Wiley & Sons, N.Y., 1988.

## SYLLABUS

Hrs	Frontal teaching
1	Introduction. Objectives and articulation. Peculiarity' of the fruit tree plants. Different types of arboriculture
3	Root system
3	Aerial system
5	Annual Cycle
4	Fructification cycle
4	Fruit development period and maturation
4	Fruit trees propagation
2	Fruit tree breeding
2	Orchard establishment
5	Orchard systems
2	Soil management
2	Fruit tree nutrition
2	Fruit tree irrigation
3	The Olive tree
3	Citrus species
3	Vines and table grape
4	Pome fruit trees
4	Stone fruit trees
Hrs	Practice
2	Fruit tree parts and organization
3	Fruit tree species recognition
2	Plant Propagation techniques
Hrs	Workshops
3	/Fruit quality determination/
3	Fruit tree ecophysiology and gas exchange measurements
Hrs	Others
6	Seminars
1	Written test