UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	AGRICULTURAL SCIENCES AND TECHNOLOGIES
SUBJECT	CHEMICAL-PHYSICAL SOIL ANALYSIS
TYPE OF EDUCATIONAL ACTIVITY	D
AMBIT	10517-A scelta dello studente
CODE	18707
SCIENTIFIC SECTOR(S)	AGR/13
HEAD PROFESSOR(S)	LAUDICINA VITO ARMANDO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	3
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**LAUDICINA VITO ARMANDO** Wednesday 11:00 14:00 Dip. SAAF, 1° piano, studio 142

DOCENTE: Prof. VITO ARMANDO LAUDICINA

PREREQUISITES	Knowledges of inorganic and organic chemistry, as well as of soil chemistry are required
LEARNING OUTCOMES	Knowledge and understanding skill: the student will acquire the skill to apply the physical and chemical methods for soil characterization. Skill in applying knowledge and understanding: the student will be able to utilize soil data to evaluate the soil fertility and to plan its sustainable use. Autonomy of judgement: the student will be able to interpret soil data and to foresee the soil suitability for vineyard. Furthermore, the student will be able to foresee the flux of soil nutrients. Communication skill: the student will be able to describe the methods of soil analyses and to select the most appropriate for a specific soil. Learning skill: the student will be able to go into the biogeochemical processes of soil nutrients by using textbooks and research articles published in the category of soil science.
ASSESSMENT METHODS	One laboratory test at the end of the course; Objective of the laboratory test is the determination of some soil properties and the explanation of the obtained results; The duration of the laboratory test is 1 hour; The minimum mark is 18; the maximum mark is 30 cum laude; The test is passed with the minimum mark (18) when the student has a basic knowledge of the laboratory equipment and manual expertise to carry out the laboratory test. An intermediate score between 18 and 30 is obtained if the student shows a good knowledge of the laboratory equipment and manual competence for the performance of the test. The test is passed with the maximum mark (30) when the student has an excellent knowledge of the laboratory equipment, excellent manual expertise to carry out the laboratory test and to understand of obtained results.
EDUCATIONAL OBJECTIVES	The student will be provided with the basic theory to apply the methods of soil analysis for a sustainable use of soil resource. In particular, during the course, the student will provide with the methods of soil analysis to understand the soil attitude to tillage, irrigation, crop choice and fertilisation. At the end of the course, the student will have acquired the required knowledges for the determination of the main physical and chemical soil properties and for the interpretation of soil data.
TEACHING METHODS	The course is structured in frontal lessons and laboratory exercises.
SUGGESTED BIBLIOGRAPHY	1.MiPAF, 2000. Metodi di analisi chimica del suolo. Ed. Franco Angeli 2.MiPAF, 2004. Metodi di analisi biochimica del suolo. Ed. Franco Angeli 3.Sequi P., 2005. Fondamenti di chimica del suolo. Patron Editore. Bologna.

SYLLABUS

Hrs	Frontal teaching
2	Recalling basic concepts about soil. Soil composition. Main physical, chemical and biochemical soil properties.
2	Soil sampling and storing.
1	Soil sieving
2	Determination of available phosphorus

Hrs	Practice
3	Determination of soil texture
4	Determination of total soil nitrogen
4	Presentation and interpretation of soil analytical data

Hrs	Workshops
5	Determination of soil pH, electrical conductivity and total carbonates
4	Determination of soil organic carbon
3	Determination of exchange cation capacity and of exchangeable bases