# UNIVERSITÀ DEGLI STUDI DI PALERMO

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| **DEPARTMENT** | Scienze Agrarie, Alimentari e Forestali |
| **ACADEMIC YEAR** | 2017/2018 |
| **BACHELOR'S DEGREE (BSC)** | VITICULTURE AND OENOLOGY |
| **SUBJECT** | CHEMICAL-PHYSICAL ANALYSIS OF AGRICULTURAL SOILS |
| **TYPE OF EDUCATIONAL ACTIVITY** | D |
| **AMBIT** | 10517-A scelta dello studente |
| **CODE** | 16357 |
| **SCIENTIFIC SECTOR(S)** | AGR/13 |
| **HEAD PROFESSOR(S)** | BADALUCCO LUIGI Professore Ordinario Univ. di PALERMO |
| **OTHER PROFESSOR(S)** | |
| **CREDITS** | 3 |
| **INDIVIDUAL STUDY (Hrs)** | 45 |
| **COURSE ACTIVITY (Hrs)** | 30 |
| **PROPAEDEUTICAL SUBJECTS** | |
| **MUTUALIZATION** | |
| **YEAR** | 3 |
| **TERM (SEMESTER)** | 2° semester |
| **ATTENDANCE** | Mandatory |
| **EVALUATION** | Out of 30 |
| **TEACHER OFFICE HOURS** | **BADALUCCO LUIGI**<br>Monday 15:00 17:00 Piattaforma Teams<br>Tuesday 15:00 17:00 Sede CdL Viticoltura ed Enologia<br>Wednesday 15:00 17:00 Sede CdL Viticoltura ed Enologia<br>Thursday 15:00 17:00 Piattaforma Teams |

**DOCENTE:** Prof. LUIGI BADALUCCO

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| **PREREQUISITES** | Knowledges of chemistry and soil chemistry are required to attend the course of "Chemical and physical analysis of agricultural soils" |
| **LEARNING OUTCOMES** | Knowledge and understanding skill: the student will acquire the skill to apply the physical and chemical methods for soil characterization.<br>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.<br>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.<br>Communication skill: the student will be able to describe the methods of soil analyses and to select the most appropriate for a specific soil.<br>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** | A laboratory test at the end of the course;<br>Objective of the laboratory test is the determination of some soil properties and the explanation of the obtained results;<br>The duration of the laboratory test is 1 hour;<br>The minimum mark is 18; the maximum mark is 30 cum laude;<br>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.<br>The test is passed with the maximum mark (30 cum laude) when the student has a good 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 and practical lessons. |
| **SUGGESTED BIBLIOGRAPHY** | 1.MiPAF, 2000. Metodi di analisi chimica del suolo. Ed. Franco Angeli<br>2.MiPAF, 2004. Metodi di analisi biochimica del suolo. Ed. Franco Angeli<br>3.Sequi P., Ciavatta C., Miano T., 2005. Fondamenti di chimica del suolo. Patron Editore. Bologna. |

## SYLLABUS

| Hrs | Frontal teaching |
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| 4 | Recalling basic concepts about soil. Soil composition. Main physical, chemical and biochemical soil properties |
| 4 | Soil sampling and storing |
| 2 | Presentation and interpretation of soil analytical data |

| Hrs | Workshops |
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| 4 | Soil sieving |
| 2 | Determination of soil texture |
| 2 | Determination of soil pH, electrical conductivity and total carbonates. |
| 2 | Determination of soil organic carbon. |
| 2 | Determination of total soil nitrogen. |
| 2 | Determination of available phosphorus |
| 1 | Determination of soil cation exchange capacity |