



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	AGRICULTURAL SCIENCES AND TECHNOLOGIES
SUBJECT	GENERAL AGRONOMY
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50125-Discipline della produzione vegetale
CODE	19935
SCIENTIFIC SECTOR(S)	AGR/02
HEAD PROFESSOR(S)	LA BELLA SALVATORE Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	7
INDIVIDUAL STUDY (Hrs)	115
COURSE ACTIVITY (Hrs)	60
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	LA BELLA SALVATORE Monday 8:00 10:00 Dipartimento SAAF, Ed 4, Ing. L, Piano II, Studio La Bella

DOCENTE: Prof. SALVATORE LA BELLA

PREREQUISITES	The course "general Agronomy" does not require any mandatory preparatory course, however, basic knowledge of the fundamentals of mathematics, physics and chemistry are necessary in order to understand the main technical and practical problems of the course and to offer rational solutions.
LEARNING OUTCOMES	<p>Knowledge and comprehension skills The course will provide students with knowledge on the structure and functioning of the agrosystems in order to understand the mechanisms which determine agricultural plant production and their interaction with human activities.</p> <p>Ability to apply skills and understanding Students will gain the knowledge and expertise required to design and manage a farm, through the identification of sustainable and appropriate methods and techniques.</p> <p>Autonomy of assessment Ability to assess the specific characteristics of the farm and farming area for the correct use of agro-ecological resources; ability to assess the sustainability of the agronomic practices from an economic, social and environmental point of view.</p> <p>Communicative ability The course requires that the students to have basic communicative skills in order to transfer clearly and thoroughly information, project ideas and technical solutions.</p> <p>Learning capacity The course requires the students to be able to further knowledge on subjects areas contained in the course through the consultation of texts relevant to the sectors of agronomy and agricultural ecology, scientific publications and specialized seminars.</p>
ASSESSMENT METHODS	Students will be evaluated by one final oral exam on topics lectured in the course programme. Score ranges from 18 (minimum, elementary knowledge) to 30 cum laude (perfect knowledge and excellent ability of communication). Exam will start with a brief oral communication on a topic decided by the student, and will proceed with 4-6 questions randomly asked by the committee. Student knowledge will be evaluated considering answer correctness, language pertinence, ability in expressing logical connections among topics of soil science. Exam score will take into consideration the achievement by the students of the learning outcomes and educational objectives as described in the following paragraphs.
EDUCATIONAL OBJECTIVES	The course seeks to provide the rudiments of agronomy and ecophysiology concerned with production. In particular, the course will focus on the structure and functioning of agrosystems, plant-soil-atmosphere relationships and agronomic techniques.
TEACHING METHODS	The course (60 hours) is organised as follow: 40 hours of lectures in classroom, 12 hours of exercises in classroom and in field, tecnic visits. Reading materials and slides of lecture presentations will be provided in course. While lecturing a selection of some short educational video documentaries and multimedia resources will be projected and commented to stimulate learning capacity of students. Integral part of the course is a field trip.
SUGGESTED BIBLIOGRAPHY	<ul style="list-style-type: none"> - Appunti dalle lezioni. - Ceccon, P. - Agronomia. EdiSES, 2017. - L. Giardini – Agronomia generale ambientale ed aziendale. Patron editore (IV ediz.). - F. Bonciarelli – Fondamenti di agronomia generale. Edagricole. - M. Pisante - Agricoltura blu. La via italiana dell'agricoltura conservativa. Edagricole

SYLLABUS

Hrs	Frontal teaching
2	Introduction to the course: aims and objectives
2	Factors of crop agricultural production; agronomic and crop responses.
4	Climate and agricultural plant. Solar radiation. Effect of radiation of different wavelength on the plants. energy balance. Photosynthetic energy conversion. agronomic aspects related to the intensity of light. Photoperiodism. Temperature. Hydrometeors. Wind. Wind erosion. composition of the atmosphere. Phenology and agricultural areas. Classification of climates.
3	The soil: agronomic aspects Definition and functions. Stratigraphy. Characteristics and fertility. Weaving. Structure of agricultural land. Training and size of the aggregates. Porosity. Agronomic measures designed to change the structure. Gaseous phase of the soil, the dynamics of the gaseous phase. Thermal properties of the soil.
3	The water in the soil. Water potential in the soil. Matric potential and soil moisture. Constant hydrological and their determination. water dynamics in soil. Influence of agronomic interventions on the hydraulic conductivity of the soil.
3	Chemical and physico-chemical characteristics of the soil: agronomic aspects. Composition soil solution. The pH of the soil and cultivation of acid soils, alkaline and saline-alkali. Biological activity of the soil.

SYLLABUS

Hrs	Frontal teaching
3	Tilling soil. Aims. Classification. Soil moisture and its workability. Works for cultivation. major preparatory work. Plowing. Digging. Scarifying. Milling. Additional preparatory work. Minimum tillage and no-till. The dry farming techniques.
4	Irrigated variables. Determining the intervention time irrigation. Quality of irrigation water. Irrigation methods.
3	Water Stagnation: origin and its effects on soil and crops. Water erosion. Hydraulic-agrarian settlements on plains and hills
2	The organic matter of the soil: Functions. Factors affecting the evolution. Organic fertilization. Agronomic strategies to maintain and improve the organic matter content of the soil.
5	The mineral fertilization: The issues. The type of fertilization. The fertilizer dose. The nitrogen fertilizer, phosphate and potash. Fertilizers containing minor elements. Fertilizer application mode.
2	The cropping systems. The intercropping and the crop rotation.
2	Weeds management. Direct physical means. Biological means. Chemical weed control. Effect of herbicides on crops in succession. Herbicides, environment and public health.
2	Ecosystems and agriculture. intensive agriculture, extensive, sustainable, eco-friendly and organic: definitions
Hrs	Practice
12	Exercises in the classroom of teaching different subjects of the programme.
Hrs	Others
8	Technical visits in the field