



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	
ACADEMIC YEAR	
ANNO ACCADEMICO EROGAZIONE	
SUBJECT	
CODE	
SCIENTIFIC SECTOR(S)	
HEAD PROFESSOR(S)	IACUZZI NICOLÒ Ricercatore a tempo determinato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	
TERM (SEMESTER)	
ATTENDANCE	
EVALUATION	
TEACHER OFFICE HOURS	IACUZZI NICOLÒ Monday 09:00 12:00 tutti i giorni previo appuntamento via mail: nicolo.iacuzzi@unipa.it Tuesday 09:00 13:00 Stanza docente, Edificio 4, ingresso L, secondo piano. Wednesday 09:00 12:00 Polo Universitario di Caltanissetta

<p>PREREQUISITES</p>	<p>The teaching "General Agronomy" requires that students possess adequate basic knowledge of biology, botany, chemistry, physics and mathematics for the understanding of the main contents and objectives of the course. The teaching does not provide any compulsory preparation, but the knowledge of certain teachings is necessary to understand the main technical-practical problems of the course and to provide rational solutions.</p>
<p>LEARNING OUTCOMES</p>	<ul style="list-style-type: none"> - Conoscenza e capacità di comprensione Il corso intende fornire le conoscenze relative alla struttura e funzionamento degli agro-ecosistemi, al fine di comprendere i meccanismi che determinano la produzione vegetale agraria e le loro interazioni con gli interventi dell'uomo. La capacità di comprensione dei principali contenuti del corso è subordinata all'acquisizione di un linguaggio tecnico specifico di questo insegnamento. - Capacità di applicare conoscenza e comprensione L'insegnamento si pone come obiettivo principale quello di sviluppare negli studenti la capacità di pianificare determinate operazioni colturali aziendali considerando l'effetto delle variabili meteorologiche e del suolo sulle colture agrarie e di applicare razionalmente le principali tecniche agronomiche in base al contesto aziendale di riferimento. - Autonomia di giudizio L'insegnamento richiede che gli studenti siano in grado di valutare autonomamente le criticità dei sistemi agrari e colturali nei diversi contesti ambientali e di valutare la sostenibilità delle pratiche agronomiche dal punto di vista economico, sociale e ambientale. - Abilità comunicative L'insegnamento richiede che gli studenti siano in possesso di abilità comunicative in modo da trasferire in modo chiaro ed esauriente informazioni ed idee progettuali e soluzioni tecniche a professionisti, imprenditori, amministratori e rappresentanti dell'opinione pubblica. Si richiede che l'attività di divulgazione sia effettuata anche nei confronti di un pubblico non esperto. - Capacità d'apprendimento L'insegnamento richiede che gli studenti siano capaci di approfondire le tematiche del corso attraverso la consultazione di testi scientifici, pubblicazioni scientifiche e riviste divulgative attinenti il settore dell'agronomia. Si richiede, anche, la capacità di trasferire le conoscenze tecniche acquisite durante il corso o durante la frequenza di master, seminari e meeting specifici, nel settore lavorativo e professionale.
<p>ASSESSMENT METHODS</p>	<p>The course includes an oral test. The oral test consists of an interview, aimed at ascertaining the possession of the disciplinary skills and knowledge required by the course. The evaluation is expressed in thirtieths (from 18 - just sufficient and elementary knowledge of the topics - to 30 cum laude - excellent knowledge of the topics and excellent communication skills). The oral interview involves the administration of open and semi-structured questions aimed at verifying the knowledge acquired, the processing and presentation skills of the student. Regarding the knowledge assessment, the ability to establish connections between the course contents is required. The assessment of processing aptitudes will be established on the basis of the student's ability to provide autonomous judgments regarding the contents of the teaching, to understand the possible practical applications of the teaching and to place the disciplinary contents within the professional context of reference. As regards the verification of processing skills, language skills appropriate to the professional context of reference will be required. The preparation check and the grade will take into account the student's acquisition of the expected results and the achievement of the training objectives, described in the specific following paragraphs. Compensatory tools and dispensatory measures will be guaranteed by the Disability and Neurodiversity Center - University of Palermo (Ce.N.Dis.) to students with disabilities and neurodiversity, based on specific needs and in implementation of current legislation.</p>
<p>EDUCATIONAL OBJECTIVES</p>	<p>The teaching "General agronomy" aims to provide students with basic knowledge and skills to be able to understand the plant-soil-atmosphere relationships and plan and manage the main operational processes and cultivation techniques that characterize the farm's agricultural activity.</p>
<p>TEACHING METHODS</p>	<p>The course includes lectures, exercises and technical-educational visits at experimental fields and private companies. The teacher, during the course, will also provide students with specific study material and lecture presentations. During the lessons there will be short projections of educational video material and multimedia animations chosen by the teacher in order to stimulate learning ability.</p>
<p>SUGGESTED BIBLIOGRAPHY</p>	<ul style="list-style-type: none"> - Materiale didattico fornito dal docente. - Ceccon P. - Agronomia. EdISES, 2017. - Casa R. - Agricoltura di precisione. Edagricole 2016 - Giardini L. - Agronomia generale ambientale ed aziendale. Patron editore (IV

ediz.).
 - Bonciarelli F. - Fondamenti di agronomia generale. Edagricole.
 - Pisante M. - Agricoltura blu. La via italiana dell'agricoltura conservativa. Edagricole

SYLLABUS

Hrs	Frontal teaching
2	Introduction to the course: goals and objectives.
2	Agroecosystem and its components. Agroecosystem services. Principles of agricultural ecology.
2	Agronomic factors of production: agronomic response of crops
4	Climatic factors. Solar radiation. Effects of solar radiation. Energy balance. Photosynthesis e energy conversion. Agronomic aspects related to the intensity of light. Photoperiodism. Temperatures. Hydrometeor. Wind. wind erosion. Atmosphere composition. Phenology and cultivation areas. Climate classifications.
2	Evapotranspiration. Evapotranspiration estimation. Crop coefficients.
3	The soil. Definition, functions, constitution. Stratigraphy and soil profile. Soil fertility and productivity. Soil grain size. Texture and structure. Generality and role of soil structure. Training, size and stability of the aggregates. Porosity. Factors influencing soil structure. The air phase of the soil. Thermal properties of the soil.
3	The water in the soil. The potential of water in the soil. Matric potential and soil moisture. Soil moisture measurement. Hydrological constants and their determination. Dynamics of water in the soil. Influence of agronomic interventions on the hydraulic conductivity of the soil.
3	Chemical and physicochemical characteristics of the soil: agronomic aspects. Solution composition circulating. Soil pH and the cultivation of acidic, alkaline and saline-alkaline soils. Soil biological activity.
4	Soil tillage. Classification. Soil moisture and tillage. Cultivation tillage. Plowing. Digging. Scarifying. Milling. Complementary preparatory tillage. Minimum tillage and no tillage. Variable tillage of the soil and seeding with variable dose. Dryland farming techniques.
4	Irrigation. Soil suitability for irrigation. Crop irrigation needs. Irrigation variables. Irrigation water efficiency. Determination of the moment of irrigation intervention. Quality of irrigation water. Main irrigation methods. Variable rate irrigation. Microirrigation and subirrigation site-specific. Irrigation with wastewater and brackish water.
3	Regulation of excess water: Water stagnation: origin and its effects on soil and crops. Erosion water, sedimentation and landslides. Regulation of water flow velocity. Protection from stagnation. Surface arrangement of flat soils. Under-surface drainage. Regimation of fast water outflows. Landscaping on a slope.
3	Soil organic matter. Functions. Factors influencing the evolution of organic matter. The ratio C/N. The isoumic coefficient. Organic fertilization. Agronomic strategies for the maintenance and improvement of soil organic matter content.
4	Mineral fertilization. Types of fertilizers. Dose of fertilizer. Nitrogen, potassium and phosphate fertilization. Fertilisers containing micro-nutrients. Application and distribution of fertilisers. Variable fertilisation rate. Agronomic response to fertilization.
2	Weed management. Physical means. Biological means. Chemical control of weeds. Effect of herbicides on crops in succession. Herbicides, environment and public health.
2	Ecosystems and agriculture. Intensive, extensive, sustainable, environmentally friendly and biological agriculture: definitions and issues.
Hrs	Practice
10	Classroom exercises on different program topics
Hrs	Others
7	Technical-educational visit to experimental fields and/or farms.