COURSE OF STUDY *Agricultural Sciences and Technologies – Curriculum "Plant production and protection of crops*

ACADEMIC YEAR *2023-2024*

ACADEMIC SUBJECT- *Herbaceous crops (6 CFU)-CI CI Agronomy and herbaceous crops*

General information	
Year of the course	II
Academic calendar (starting and ending date)	II semester
Credits (CFU/ETCS):	6
SSD	AGR/02
Language	Italiano
Mode of attendance	

Professor/ Lecturer	
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Department and address	Department of Soil, Plant and Food Science (DiSSPA)
Virtual room	TEAMS platform
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Every day by appointment via e-mail.

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
150	32	16	90
CFU/ETCS			
6	4	2	

Learning Objectives	The main objective is to provide the student with information on the agronomic aspects of cropping systems on a field/farm scale. Emphasis will be placed above all on the use of the main herbaceous crops (cereals, oilseeds, legumes, sugar beets, potatoes, industrial tomatoes) and the management of crop rotation, in order to improve agricultural performance (yield and quality) by reducing the impact on the environment and the use of natural resources.
Course prerequisites	Basic knowledge of plant biology and botany

Teaching strategie	Lectures with powerpoint aid, video material. Field and/or farm exercises.
Expected learning outcomes in terms of	
Knowledge and understanding on:	○ Knowledge of sustainable technologies for the management of herbaceous crop productions in their quantitative, qualitative and environmental aspects; ○ Knowledge of technologies related to the transformation and marketing of products;

	○ Knowledge of the technical means and products of the agricultural sector with particular reference to the sustainable agronomic, economic and ecological protection and management of resources; ○ Identification of the main plant species and subspecies treated-
Applying knowledge and understanding on:	○ Ability to make crop choices in harmony with environmental variables and primary production activities at farm level
Soft skills	○ Making informed judgments and choices – Define the most suitable species for each specific production chain and environmental context, define their specific quantitative and qualitative characteristics in relation to the intended use and critically identify their potential and limits. ○ • Communicating knowledge and understanding – Ability to explain and motivate the choices made in the field of cultivation systems for the crop production ○ • Capacities to continue learning – Ability to learn the criteria for choosing the most suitable species for each specific production chain and environmental context, the relationships between technical interventions and the environment, the specific quantitative and qualitative characteristics in relation to the intended use and to critically identify the potential and limits on the basis of the knowledge acquired during the course. The expected learning outcomes in terms of knowledge and abilities are reported in Annex A of the Academic Regulations (expressed through the European descriptors pertinent to the degree program).
Syllabus	
Content knowledge	• Crop systems: Principles and Management • Principles of Ecology in Plant Production • Winter cereals: wheat and barley - origins and diffusion - bioagronomic aspects associated with nutritional, qualitative and technological characteristics • Spring cereals: rice and corn - origins and diffusion - bioagronomic aspects associated with nutritional, qualitative and technological characteristics • Grain legumes: soybeans, broad beans, chickpeas, beans - origins and diffusion - bioagronomic aspects associated with nutritional, qualitative and technological characteristics • Sugar-crop: sugar beet - origins and diffusion - bioagronomic aspects associated with nutritional, qualitative and technological characteristics • Oil crops: rapeseed, sunflower - origins and diffusion • Open field vegetables: potato, tomato - origins and diffusion - bioagronomic aspects associated with nutritional, qualitative and technological characteristics
Texts and readings	• Verso un approccio integrato allo studio dei sistemi colturali. Franco Angeli ed., Milano, 121-144. • Baldoni, R., Giardini, L., Coltivazioni Erbacee – Cereali Proteaginose. Patron Editore. 2002 • Baldoni, R., Giardini, L., Coltivazioni Erbacee – Piante oleifere, da zucchero, da

	fibra, orticole e aromatiche. Patron Editore. 2002 • Baldoni, R., Giardini, L., Coltivazioni Erbacee – Foraggere e tappeti erbosi. Patron Editore. 2002
Notes, additional materials	
Repository	Power point slides

Assessment	
Assessment methods	The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in the laboratory/field
Assessment criteria	• *Knowledge and understanding* The knowledge and understanding of the concepts related to herbaceous crops and crop systems illustrated during the course will constitute the elements for the basic evaluation of the student. • • *Applying knowledge and understanding* A further element of evaluation will consist of the ability to understand the aspects relating to the choices of -food crops most suitable for the development of production chains. • • *Autonomy of judgment* The ability to choose the most suitable crops for the development of production chains, while respecting the environment and the health of operators will constitute another essential element of evaluation. • • *Communicating knowledge and understanding* A further element of evaluation will be the student's ability to explain and motivate the choices made in the agronomic management of crop systems dedicated to the production of food • • *Communication skills* At the end of the course the student will be able to demonstrate:a solid knowledge of herbaceous crops, outline the main production chains from a technical-scientific point of view, from the agricultural production of the raw material to the finished product; define the most suitable species for each specific production chain and environmental context, define their specific quantitative and qualitative characteristics in relation to the intended use and critically identify their potential and limits. • • *Capacities to continue learning* ○ Ability of deepening and updating knowledge about the crops for the development of production chains
Final exam and grading criteria	The final exam consists of an oral dissertation concerning the topics developed during the theoretical and practice lessons. The evaluation of the students' accomplishment is expressed by a vote of thirty. The final exam is passed with a vote of at least 18/30. A first class degree can be attributed in the case of top vote (30/30). The oral examinations are public.
Further information	