



Universitat de Lleida

DEGREE CURRICULUM
**AGRONOMY: AGRICULTURAL
SYSTEMS**

Coordination: CANTERO MARTINEZ, CARLOS

Academic year 2023-24

Subject's general information

Subject name	AGRONOMY: AGRICULTURAL SYSTEMS			
Code	12740			
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Master's Degree in Agronomic Engineering	2	OPTIONAL	Attendance-based
	Master's Degree in Integrated Pest Management	1	OPTIONAL	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRALAB	TEORIA	
	Number of credits	2	4	
	Number of groups	1	1	
Coordination	CANTERO MARTINEZ, CARLOS			
Department	AGRICULTURAL AND FOREST SCIENCES AND ENGINEERING			
Teaching load distribution between lectures and independent student work	Nº hores presencials 60 Nº hores no presencials 90			
Important information on data processing	Consult this link for more information.			
Language	Castellà (95%), Anglès (5%)			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CANTERO MARTINEZ, CARLOS	carlos.cantero@udl.cat	6	

Subject's extra information

Other teachers: They vary each academic year and are associated with the internships that take place in the subject

Training in Integrated Crop Protection requires a knowledge of crop production techniques. The subject of agronomy: Agricultural Systems involves the advanced integration of knowledge about extensive crop production. Above all, it gives a globalizing view of the concepts of production techniques not within a plot or field, but within an Agricultural System. It also aims, for students training in Integrated Crop Protection, to establish the limitations and biotic conditions within agricultural systems, establish the importance and relative weight within the productive system and establish control strategies and methods taking into account all the available agronomic techniques and their interrelationship. To study this subject it is important to have basic knowledge of extensive crop production systems.

Those who do not have one will have the necessary material to purchase in advance.

Learning objectives

The knowledge that the student must achieve are: Integrate the Agronomic knowledge acquired so far, deepening in the analysis of the biotic factors (pests, diseases and weeds) and technological of the systems of production inside the wide frame of the Mediterranean Agricultural Systems of the Ebro Valley That is why it is proposed: LO1. Study and analyze the most important extensive cultivation systems and their agronomic characteristics. Ra2. Know and analyze the methodology for the study of Agricultural Systems. LO3. Know and analyze the most important Agricultural Systems of Mediterranean environments with special emphasis on the Central and Eastern Ebro Valley (Catalonia Aragon). LO4. To study the abiotic (climate and soil), biotic (pests, diseases and weeds) and technological characteristics of the production systems of the Mediterranean Agricultural Systems.

Competences

General skills CG1: Research, analysis and selection of technical and scientific information. CG2: Analysis of technological situations in relation to a specific social, economic and political environment and in particular agricultural. CG3: Ability to analyze new situations. CG4: Writing papers, reports and conclusions and oral presentation in a specialized auditorium. CG5: Cooperative work in small, multidisciplinary and multicultural groups. CG6: Rigor in the work approaches, methods and elaboration of conclusions from scientific, technical and ethical points of view. CG7: Lifelong learning ability. CG8: Critical spirit towards dogmatism. Specific skills CE1: Knowledge of methods and techniques to address and apply in an integrated and selective way the most efficient solutions. CE2: Ability to translate a problematic situation into knowledge questions that constitute research objectives and knowledge of the main sources of information within the areas of work and ability to consult, understand and apply them. CE3: Ability to place the problem and possible solutions in the context of the crop and the social, economic and legislative environment. CE4: Ability to assess the results of decisions made.

Subject contents

The Program is divided into sections between the theoretical sessions and distribution of the contact hours by section is presented in Table nº1. Table 1. Program of the subject Agronomy: Agricultural Systems and face-to-face time assigned to each section.

Apartat	Theory		Practices	
	Sessions	Hours	Sessions	Hours
1. Introduction and characterization of Agricultural Systems	1	4.0		
2. Systems Analysis and Evaluation Agricultural	1	4,0		
3. Mediterranean Agricultural Systems: Rainfed Systems	1	4,0		
4. Mediterranean Agricultural Systems: Irrigation Systems	1	4,0		
5. Mountain Agricultural Systems	1	4,0		
7. Internship: Systems Mountain farms in the Pyrenees			1	7
8. Internship: Rainfed Agricultural System of the Ebro Valley			1	7
9. Internship: Irrigated Rainfed Agricultural System of the Ebro Valley			1	7
10. Internship: Rainfed and Irrigated Rainfed Agricultural System of the Ebro Valley			1	7
11. Internship: Delta of Ebro river System			1	7
12. General Reports Presentation	1	5		
TOTAL	6	25,0	5	37,5

Below is the content of all the activities (theoretical and practical, face-to-face and non-face-to-face).

Theory classes program Session 1. Introduction to the study of agricultural systems. Classification of agricultural systems. In this session, the student will be introduced to the concepts of production systems, agricultural systems, etc. It will be indicated how the agricultural systems are classified. Session 2. Study and evaluation of agricultural systems. Explain the basic methodology for the study and analysis of agricultural systems and what will be the basis for the work. Session 3. Characteristics and analysis of Mediterranean Agricultural Systems. . Perspective of the agricultural systems of the Iberian Peninsula. This session will analyze the main characteristics of the Agricultural Systems of the Iberian Peninsula and with particular emphasis those of the Vall de l'Ebre as the basis of the Mediterranean Agricultural Systems. Extensive agricultural systems of arid and semi-arid areas. This session will be dedicated to the study and analysis of Extensive Agricultural Systems in the Mediterranean areas. Session 4. Agricultural irrigation systems This session will be dedicated to the study and analysis of Intensive Agricultural Systems in the Mediterranean areas. Sessió 5. Sistemes agrícoles de muntanya. S'aprofundirà en els Sistemes Agrícoles de Muntanya i farratger Ramaders

Program of classes and practical visits: Session 7. Internship trip to the forage-livestock system of northern Catalonia Session 8: Internship trip to the dry agricultural system of western Catalonia Session 9: Internship trip to the extensive irrigation system of Urgell Session 10. Internship trip to Monegros Dry and Extensive Irrigation System Session 11. Internship trip to the Ebro Delta Agricultural System In each of the trips, the abiotic characteristics of the studied Systems will be studied, which condition the Agricultural production. The Production System will be studied and analyzed with all the agricultural technology used and its variants. Special attention was paid both to the description and to the analysis and search for alternatives to the biotic factors (pests, diseases and weeds) that condition and limit the productive system. A sustainability analysis of the visited Agricultural System will be carried out.

Program of supervised non-contact activities (they can change each academic year) Non-contact activity 1. Carrying out the reports of the practical visits. (INDIVIDUAL) Non-contact activity 2. Completion of the Course Work of characterization, analysis and evaluation of an Agricultural Systems. (IN GROUP).

Methodology

The course is organized according to the European Credit Transfer System (ECTS), which takes into account the volume of work done by the student in both face-to-face and non-face-to-face activities (supervised and non-supervised). The distribution between theory and practice is 30 -70%. Face-to-face activities Face-to-face theory and practice activities take place in classroom classes and field practice trips. Attendance at a minimum number of practical classes is mandatory. Attendance at theory classes is highly recommended. The total number of face-to-face hours is 60, which is taught in 5 classroom sessions in the first 3 weeks and 5 full-day scheduling trips on the dates marked in the months of April and May. Each day of the 5 classroom sessions, the subject is organized in a day of 4 hours in a row, of 60 minutes each. There is a 10 min break every hour. Theory classes last 50 minutes and are developed through the presentation of its contents by the teacher and the discussion of questions raised and which serve as basic knowledge for the study of Agricultural Systems. Most of the teaching material used is available to students before class. Internship trips are organized throughout the day. The trip consists of one or more visits to farms, farms and cooperatives where various agents in the area explain the characteristics of the Agricultural System visited. There are five trips to study and analyze five different Agricultural Systems. At the end of each trip, students must individually submit a report of the work done according to a model delivered by the teacher. Internship trips are made in a single group, with the assistance of one or more technicians or experts invited as teachers. Supervised non-contact activities The non-contact activity will consist of carrying out a work of description and analysis of a chosen Agricultural System. It will be studied according to the script provided in the theoretical classes and will be carried out by groups that will be formed according to the students of the subject at the beginning of the course. All the works will be exposed in the last class of the subject according to the facilitated calendar. Attendance will be required. All oral presentations are made on the same day and after each presentation there is a round of questions and discussion.

Development plan

At the beginning of the class, the student has a detailed calendar of activities that take place each day of class.

Evaluation

The assessment system is continuous assessment, which takes into account all the work done by the student throughout the course. To pass the subject it will be necessary to pass each of the independent parts of which it consists. Theory: Attendance to theoretical classes. Visits: A minimum of 3 of the 5 planned visits must be attended. A report will be presented after each outing according to the model provided by the teacher. Work of the subject: It will have to realize a work of description and analysis of a chosen Agricultural System studied according to the script facilitated in the theoretical classes and will realize by groups. All the works will be exposed in the last class of the subject according to the facilitated calendar. Attendance will be required. The final score of the subject will be calculated with the following weights: Attendance to the Theoretical Classes and participation, 20%; Departure attendance, 30%; Course work 35%; Visit Reports, 15%.

Bibliography

At the beginning of the class, the student has a list of the reference bibliography, which is then presented by each teacher in each corresponding topic.