



Universitat de Lleida

DEGREE CURRICULUM  
**BROADACRE CROP  
TECHNOLOGY**

Coordination: CANTERO MARTINEZ, CARLOS

Academic year 2023-24

## Subject's general information

<b>Subject name</b>	BROADACRE CROP TECHNOLOGY			
<b>Code</b>	102551			
<b>Semester</b>	1st Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Bachelor's Degree in Agricultural and Food Engineering	3	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	6			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRACAMP	PRALAB	TEORIA
	<b>Number of credits</b>	1.5	1.3	3.2
	<b>Number of groups</b>	1	1	1
<b>Coordination</b>	CANTERO MARTINEZ, CARLOS			
<b>Department</b>	AGRICULTURAL AND FOREST SCIENCES AND ENGINEERING			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Català: 10% Castellà: 85%			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CANTERO MARTINEZ, CARLOS	carlos.cantero@udl.cat	5,5	
SIN CASAS, ESTER SATURNINA	ester.sin@udl.cat	,5	

## Subject's extra information

Subject / subject in the whole curriculum This course aims to inform and train students in the basics of plant production of Extensive Herbaceous Crops. It will integrate, in the study of the bases of the specialized agronomic production for these crops, the basic knowledge of Biology, Plant Physiology, Soil Science and Climatology and of others a little more specific like Bases of the vegetal production, Entomology, Pathology and Weed science. It is a subject that aims for students to integrate and use the prior knowledge acquired. On the other hand, it is a finalist within the degree and aims for the student to develop this ability to address the complex and real problems that occur in the field of Agronomy of Extensive Herbaceous Crops. Its characteristic is informative - formative with 80% descriptive and 20% analytical. It will allow to expand knowledge of the Production of Extensive Herbaceous Crops in other subjects of the same degree like Extensive Crops.

## Learning objectives

The objectives to be achieved include: 1. To Know the cultivated species. 2. To Learn the cultivation techniques and production systems applied to Field Crops. 3. To obtain criteria for the optimization of the productions of extensive herbaceous crops in Agricultural Farms . 4. To Know the methodology for the study of crops. 5. To develop the skills and capacity for the application and development of technology of these crops. 6. Calculate doses and parameters related to planting techniques, fertilization, irrigation, and control of pests, weeds and diseases. 7. To plan and elaborate the programs of management of the crops in the agricultural farms. Fertilization, sowing, etc.

## Competences

General skills CB2. That students know how to apply their knowledge to their work or vocation in a professional way and possess the skills they usually demonstrate through the development and defense of arguments and problem solving within their area of study. CB3. That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant issues of a social, scientific or ethical nature. CB4. That students can convey information, ideas, problems and solutions to both specialized and non-specialized audiences. CB5. That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy. Specific skills CG6. Ability to direct and manage all kinds of agri-food industries, farms and livestock, urban and / or rural green spaces, and public or private sports areas, with knowledge of new technologies, quality processes, traceability and certification and the techniques of marketing and marketing of food products and cultivated plants. CG7. Knowledge in basic, scientific and technological subjects that allow a lifelong learning, as well as an ability to adapt to new situations or changing environments. CG8. Ability to solve problems with creativity, initiative, methodology and critical reasoning. CG10. Ability to research and use the rules and regulations relating to its scope of action.

## Subject contents

Temari Subject 1. Introduction to the Production of Extensive Crops. Objectives of Agriculture. Definitions: Agronomy, Field Crops. Main Extensive Herbaceous Crops. Surfaces and productions (2 hours) Subject 2. Systems of production of Extensive Herbaceous Crops. Definitions and characteristics. The extensive crops as a basis for food. (2 hours) Item 3. Choice and use of plant material. Types of varieties. Priority criteria for the choice of plant material from Extensive Herbaceous Crops. (2 hours) Item 4. Soil management systems. Cultivation of the soil. Soil preparation systems. Objective of soil cultivation. Intensive cultivation. Advantages and problems of intensive cultivation. Conservation cultivation systems (reduced cultivation and non-cultivation). Advantages and problems of these systems. (2 hours) Item 5. Fertilization. Goal. Criteria for planning a fertilization program in Extensive Herbaceous Crops. Calculation of N-P-K fertilization. Fertilization systems used in Extensive Herbaceous Crops. Fertilizer products used. (4 hours) Topic 6. It seems. Goal. Criteria for planting planning in Extensive Herbaceous Crops. Calculation and planning of planting in Extensive Herbaceous Crops. Sowing systems used. Machinery. Item 7. Water needs and application of water in extensive herbaceous crops. Criteria and calculation of irrigation planning. Irrigation systems in Extensive Herbaceous Crops. (2 hours) Item 8. Control of weeds, pests and diseases. Objectives of control. Systems of weed control. Pest control systems. Disease control systems in Extensive Herbaceous Crops. Main diseases in Extensive Herbaceous Crops. (2 hours) Subject 9. Harvest, Storage and Conservation of the products of the Crops Herbacios Extensive. (2 hours) Item 10. Agroenergetics and energy crops. Production systems and crop technology. Criteria and considerations for cultivation for energy purposes. Energy balance of a crop. Possibilities and limitations of energy crops. (4 hours). Item 11. Introduction to extensive agricultural systems. (2 hours) Subject 12. Management and planning of the Agricultural Exploitation. Crop sheets. Gross margins (2 hours)

Practical activities Laboratory and field practices Practice 1. Climatic characteristics of the cultivation area. Soil characterization of the crop plot. Determination of soil moisture level. (1 hour) Practice 2. Recognition of crops in plant and seed. (1 hour) Practice 3. Fertilization of crops. Crop nutrient requirement calculation and distribution. (1 hour) Practice 4. Land preparation and spatial distribution. (1 hour) Practice 5. Sowing: Analysis of the sowing seed. Calculation of the sowing dose. (2 hours) Practice 6. Sowing: Day of fertilization and sowing in field. (2 hours) Practice 7. Crop sowing control: Calculation of the implantation factor. Identification of crops in the seedling stage. (1 hour) Practice 8. Development control. Growth control (1 hour) Practice 9. Identification of weeds in the vegetative period and control of weeds in the vegetative period. (1 hour) Practice 10. Calculation of crop water needs. Application and control of irrigation. (1 hour) Practice 11. Harvesting control (1 hour) Field Trips and Farm Visits Program 1. Exit to dry land area: Soil preparation and sowing, fertilization and sowing work. Visit to standard farm. (5 hours) 2. Route through dry and irrigated agricultural systems in autumn-winter. (5 hours) 3. Visit to crop trials and storage and processing companies. (5 hours)

## 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 contact hours is 60. which is taught in classroom sessions and day-long scheduling trips on the marked dates. Theory classes last 50 minutes and are developed through the presentation of their contents by the teacher and the discussion of questions raised and which serve as basic knowledge for the study of crop production 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. 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. For these activities, students have audiovisual systems and computer tablets for the monitoring of theoretical and practical classes.

**Supervised non-contact activities** The non-contact activity will consist of carrying out a work of description and analysis of a Production System of a farm. 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. Observations: 25 hours of total activity per ECTS credit have been considered. For these activities, students have audiovisual systems and computer tablets for the monitoring of theoretical and practical classes. Attendance at all sessions is mandatory From the Occupational Risk Prevention Service we are told which It is MANDATORY that students wear the following personal protective equipment (PPE) in the course of teaching practices. White lab coats unisex Safety glasses Chemical / biological protection gloves PPE can be purchased at the UdL's ÚDELS store Center for Cross-Border Cultures and Cooperation - Campus Capponet Carrer de Jaume II, 67 baixos 25001 Lleida <http://www.publicacions.udl.cat/>

## Development plan

At the beginning of the class, the student has a detailed calendar of the 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

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