



Universitat de Lleida

# DEGREE CURRICULUM **AGRONOMY**

Coordination: PLAZA BONILLA, DANIEL

Academic year 2023-24

**Subject's general information**

<b>Subject name</b>	AGRONOMY					
<b>Code</b>	100311					
<b>Semester</b>	2nd Q(SEMESTER) CONTINUED EVALUATION					
<b>Typology</b>	Degree	Course	Character	Modality		
	Double bachelor's degree: Bachelor's Degree in Veterinary Medicine and Bachelor's Degree in Science and Production	1	COMPULSORY	Attendance- based		
<b>Course number of credits (ECTS)</b>	6					
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB		PRAULA		TEORIA
	<b>Number of credits</b>	0.6	0.6	0.8	1	3
	<b>Number of groups</b>	3	4	2	1	1
<b>Coordination</b>	PLAZA BONILLA, DANIEL					
<b>Department</b>	AGRICULTURAL AND FOREST SCIENCES AND ENGINEERING					
<b>Teaching load distribution between lectures and independent student work</b>	Hores presencials: 60 Hores no presencials: 90					
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.					
<b>Language</b>	Catalan: Daniel Plaza and Joaquim Balcells. Spanish: Nieves Escalera. English: Daniel Plaza					

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BALCELLS TERES, JOAQUIM	joaquim.balcells@udl.cat	1,2	
ESCALERA MORENO, MARIA DE LAS NIEVES	mariadelasnieves.escalera@udl.cat	3	
PLAZA BONILLA, DANIEL	daniel.plaza@udl.cat	5,6	Established by previous e-mail contact.

## Learning objectives

The student must:

1. Know the cereals, legumes, oilseeds, meadows and forages used in animal feed.
2. Learn the most important nutritional characteristics of each group of field crops.

The student must be able to:

3. Identify the cultivation techniques of cereals, legumes, oilseeds, meadows and forages.
4. Be able to identify species and raw materials used for animal feed.

## Competences

### Basic skills

CB2: Apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.

CB3: 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.

CB5: Know how to develop those learning skills necessary to undertake further studies with a high degree of autonomy.

### General skills

CG2 Use the knowledge of basic sciences (biology, physics, biochemistry, physiology, mathematics, statistics, economics ...) to understand animal processes and their involvement in the agro-livestock system

### Specific competencies Science and Animal Production (CPA)

CE7 Identify the different factors of production and raw materials for animal feed and their involvement in intensive and extensive animal production.

## Specific competencies Veterinary medicine

CE25 Know and identify the raw materials for animal feed: Characteristics, production and conservation

## Transversal competences

CT6. Analyse specific situations, define problems, make decisions and implement action plans in the search for solutions.

CT7. Apply acquired knowledge to real situations, properly managing available resources.

## Subject contents

### THEORETICAL SYLLABUS

1. Introduction to agriculture
2. Most important crops and their relationship with livestock
3. Importance of crops use for animal feed
4. The CAP and the production of extensive crops. The international market for raw materials
5. Basic concepts about the quality of raw materials
6. Field crop production: Cultivation techniques
7. Cereal production
8. Quality of cereals
9. Production of legumes and oilseeds
10. Quality of legumes and oilseeds
11. Production of fodder and conservation methods
12. Quality of fodder
13. Assessment of forage quality
14. Meadows and pastures
15. Other raw materials intended for animal feed

### PRACTICAL SYLLABUS

Practice 1. Recognition of extensive crop species (seeds and plants)

Practice 2. Fertilizers and fertilization

Practice 3. Identification of cereals and by-products

Practice 4. Identification of legumes, oilseeds and by-products.

Practice 5. Identification and organoleptic assessment of hay and silage.

Practice 6. Identification of raw materials ground by microscopy

## WORKSHOPS - SOLUTION OF EXERCISES

Workshop 1. Markets

Workshop 2. Crop technology

Workshop 3. Crop rotations

Workshop 4. Crop rotations and cropping systems

Visit 1. Technical visit to farms and field crop trials

## Methodology

The course is structured in four types of activities: theoretical classes, laboratory practices, workshops (solving exercises) and a visit. Theoretical classes will try to be participatory. The practices will be carried out in the laboratory. The exercises will be done individually. The visit will be mandatory and a handwritten report will be required.

The practices, the visit, workshops and the theory will be programmed as face-to-face activities.

## Development plan

Weeks	Actividad	Hours
1	Lesson 1 Lesson 2 Lesson 3	4
2	Lesson 4 Exercises 1	4
3	Lesson 5 Lesson 6 Practise 1	5
4	Lesson 7 Lesson 8 Exercises 2	5
5	Lesson 8 Practise 2	4
6	Lesson 8 Practise 3	4
7	Exam	
8	Lesson 9 Lesson 10 Exercises 4	4
9	Lesson 10 Practise 4	4
10	Lesson 11	4
11	Lesson 12 Practise 5	4
12	Visita	4
13	Lesson 13	4
14	Lesson 14 Lesson 15 Practise 5	6
15	Exercises 3 Exercises 5	4
16	Exam	

## Evaluation

The evaluation will be continuous.

1. There will be two partial exams with short questions that will include the theoretical syllabus. Each exam is passed with a five. The qualification of the practices exam will be weighted average with the theory exam if equal or above 4.
2. Attendance at practices is mandatory (more than 85% of the internship hours). There will be a written exam along with the partial theory exam
3. Attendance at exercise resolution workshops is mandatory (over 80%). The exercises will be delivered as virtual campus activities. Attendance to the workshop is essential to evaluate the exercises.

3. Attendance at the visit is also mandatory and will be assessed by submitting a report.

In the final grade:

1. Theoretical classes 70%, shared in 2 blocks of 35% (corresponding to Daniel Plaza and Joaquim Balcells).
2. Practical classes 15%
3. Workshops 15%

## Bibliography

Boyeldieu, J. 1991. Produire des grains oléagineux et protéagineux. Agriculture d'Aujourd'hui. Tec&Doc. Lavoisier. Paris.

López Bellido, L. 1991. Cereales. Mundi-Prensa. Madrid.

Angulo, E. 2008. Alimentos para la producción animal. Ed. ETSEA

McDonald, P., R. Edwards, J.F.D. Greenhalgh. 1993. Nutrición animal. Ed. Acribia. Zaragoza

Remon. 1984. Prados y forrajes. Aedos