28411 - Agronomy

Información del Plan Docente

Academic Year	2016/17
Academic center	105 - Facultad de Veterinaria
Degree	451 - Degree in Veterinary Science
ECTS	6.0
Course	2
Period	First semester
Subject Type	Compulsory
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process has been designed as...

The learning process is structured around 40 lectures of 50 minutes each, 15 hours of laboratory work (in three types of practices), 3 hours of workshops, and one individual research work of the student. Furthermore, there will be technical visits to several types of facilities: forage dehydrating plants, unifeed plants, concentrate feeds production plants, etc. Globally, there are 150 hours of work of the student, including (60 face-to-face).

28411 - Agronomy

The lectures will develop the theoretical concepts of the Programme. The lectures presentations will be available in the Official Reprography Service of the Veterinary Faculty and the Digital Teaching Web (ADD). Teaching resources not provided by the Official Services of the University are not responsibility, and are not edited or revised by the teaching team. The evaluation process will be done exclusively on the contents of the present course.

A guideline with the protocols of practical laboratory work will be provided to the students.

The security measures in the laboratory are the following:

GENERAL SECURITY GUIDELINE IN THE LAB

- Bring the practical work protocols guideline to the laboratory

-Wear appropriate clothes to avoid contact with chemical products: bring lab coat and wear it appropriately settled; wear lab goggles and appropriate shoes

-In case of any kind of allergy, the student has to inform the teacher responsible of the practice

-Do not wear contact lenses

-Eat and drink are not permitted in the lab

-All the materials have to be left clean and well ordered when the lab work has finished.

All the attendees have to be aware of the general information provided by the UPRL

5.2.Learning activities

Learning activities consist of: lectures, lab practical work, invited lecturers workshops, research individual studies and technical visits to facilities.

Learning activities

28411 - Agronomy

Activities	Face-to-face time (h)	Student autonomous work (h)	Total
Lectures	40	55	95
Workshops	3		3
Lab practical work	15	15	30
Research work		20	20
Technical visits	2		2
Total	**60**	**90**	**150**

5.3.Program

The programme offered aims to provide the students the tools to achieve the results foreseen.

The programme consists of the following activities

Part 1. *Agriculture, Agronomy, Plant breeding, Livestock breeding. Historical origins. Importance of the Agricultural Sector. Interactions between Plant Breeding, Livestock breeding, Human and Animal feeding.*

Learning Activities:

Lectures, 3 hours.

Part 2. *Agroecology. Agroecosystems, Agri-Livestock Ecosystems, Agroforestry. Agricultural systemas. Mixed crop-livestock systems. Trophic and energetic fluxes in Agroecosystems. Ecosystem Services. Climate and Soils as Agroecosystems and Plant Production factors. Organic farming. Nutrients and iis interactions in soil-plant-animal subsystems.*

28411 - Agronomy

Learning Activities:

Lectures, 5 hours.

Part 3. *Agricultural techniques related to the use of water, soil fertility and crops.*

Learning Activities:

Lectures, 3 hours.

Part 4. *Chemical and Bromatological Assessment of plant resources for Animal feeding. Feeds classification. Botany and Animal feeding. Main botanical Families in Animal feeding.*

Learning Activities:

Lectures, 3 hours.

Practical work AGRO1, 5 hours.Chemical and Bromatological Assessment of plant resources for Animal feeding. Weende analysis.

Part 5. *Energetic concentrate feeds: cereals, roots and tubers, agrifood industry energetic by-products.*

Learning Activities:

Lectures, 5 hours.

Practical work AGRO2, 5 hours.Cereals, roots and tubers, agrifood industry by-products identification.

Part 6. *Concentrate protein-rich feeds: cakes and meals, pulses, agrifood industry protein-rich by-products.*

Learning Activities:

28411 - Agronomy

Lectures, 5 hours.

Practical work AGRO2, 5 hours.Concentrate protein-rich feeds: cakes and meals, pulses, agrifood industry protein-rich by-products identification.

Part 7. *Concentrate feeds types. Concentrate feeds production technology.*

Learning Activities:

Lectures, 1 hour.

Practical work AGRO2, 1 hour.Raw components and Concentrate feeds types.

Part 8. *Energetic and protein-rich feeds for beehives. Melliferous flora and natural vegetation, Melliferous crops.*

Learning Activities:

Lectures, 1 hour.

Part 9. *Grass and forage Science. Multifunctionality of grasslands and livestock farming. Worldwide natural and cultivated grasslands.*

Learning Activities:

Lectures, 3 hours.

Part 10. *Forage conservation systems: hay-making, silage, dehydratation processes.*

Learning Activities:

Lectures, 2 hours.

Part 11. *Grass and legume grasses. The alfalfa.*

Learning Activities:

Lectures, 4 hours.

Practical work AGRO2, 2 hours. Grass and legume grasses identification.

Part 12. *Grazing and Ecosystem Services. Stocking rates. Water. Grasslands Toxic species. Transhumance and Transterminance. Grass and forage scheduling.*

Learning Activities:

Lectures, 4 hours.

Practical work AGRO2, 1 hour. Grassland toxic species identification.

Part 13. *Low nutritional quality feeds: crops and agrofood residues.*

Unifeeds, whole mixed rations for ruminants.

Learning Activities:

Lectures, 1 hour.

Other learning activities -research work and workshops with invited lecturers and technical visits- are related to several contents.

5.4.Planning and scheduling

The planning, dates and milestones will be detailed in the Veterinary Faculty Web site (http://veterinaria.unizar.es/gradoveterinaria/) and in the ADD site (http://add.unizar.es/add/campusvirtual/).

28411 - Agronomy

5.5.Bibliography and recomended resources

The present academic course bibliography is updated and available in the Unizar Library web site:

http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=28411&Identificador=13178