

60567 - Animal production systems

Syllabus Information

Academic year: 2024/25

Subject: 60567 - Animal production systems

Faculty / School: 201 - Escuela Politécnica Superior

Degree: 546 - Master in Agricultural Engineering

ECTS: 9.0

Year: 1

Semester: Second semester

Subject type: Compulsory

Module:

1. General information

The subject and its expected results respond to the following approaches and objectives:

This subject is oriented towards learning, on the one hand, to broaden knowledge related to general aspects of animal production on farms (complementary to those acquired in the degree) and to acquire knowledge of feed formulation and use of different raw materials that contribute to the manufacture of feed used in animal production.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement

Goal 2: Zero hunger, Increase Productivity and Production, Contribute to the Maintenance of Ecosystems, and Strengthen the Capacity to Adapt to Climate Change.

Objective 9: Industry, Innovation and Infrastructure, Modernizing Infrastructure and Converting Industries to be Sustainable, Using Resources More Efficiently

Goal 12: Responsible Production and Consumption, Environmentally Sound Management of Chemicals and all Wastes Throughout Their Life Cycle and Significantly Reduce Waste Generation Through Prevention, Reduction, Recycling and Reuse.

2. Learning results

The student, in order to pass this subject, must demonstrate the following results....

To know, understand and apply the basic concepts of management of commercially exploited livestock systems for domestic species.

To know basic aspects of hygiene and sanitation in livestock farms.

To know the fundamental principles for the production of compound feed. For this purpose, the necessary knowledge of formulation, the nutritional characteristics of raw materials, as well as the technological processes applied to them, must be acquired.

To know the basic principles of livestock agrosystems.

To understand and explain the fundamental principles of beekeeping, and know how to apply different technologies related to beekeeping production.

3. Syllabus

Theory

MODULE A

- 1- Systems, properties, efficiencies
- 2- Management, functions, indexes
- 3- Compound feed industry, basic legislation
- 4- Raw materials: nutritional values
- 5- Feed Manufacturing: formulation and processes
- 6- Nutrition and intestinal health

MODULE B

- 7- Beekeeping
- 8- Pig production agrosystems
- 9- Poultry production agrosystems
- 10- Agrosystems for ruminant production

Practical cases and problems:

- 1- Calculation of nutritional requirements for monogastric animals
- 2- Feed formulation with Comfeed program
- 3- Cases on farm management, analysis and interpretation of results.

Laboratory practices:

- 1- Recognition of raw materials for compound feedstuffs
- 2- Quality control of raw materials. Laboratorial analysis: urease test, browning test, peroxides indexes
- 3- Granulometry studies
- 4- Exhibition and demonstration in the use of material and utensils used in beekeeping.
- 5- Quality analysis of products (honey, etc.) will be carried out.

Visits (valued) to:

- 1- Feed mill
- 2- Farms, fairs

If, due to force majeure, the visits cannot be carried out, they will be replaced by a series of videos provided for viewing.

4. Academic activities

Participative master classes

Focused on the learning of the main factors that intervene and influence the exploitation systems and production processes of animal species of economic interest and the fundamentals involved in the formulation and manufacturing processes of compound feed for farm animals.

Practical classes:

Set of practical activities that allow a better understanding of the knowledge related to analytical techniques and technologies.

Visit

Classes will be complemented with visits to companies, factories and facilities that show the applicability of the knowledge acquired.

5. Assessment system

The student must demonstrate that they have achieved the expected learning outcomes by passing a global test, similar in the two official exams of the academic year, following the official EPS (Higher Polytechnic School) exam calendar. The assessment will consist of :

- 1.- Written and face-to-face test, consisting of two modules

Module A: multiple-choice questions, corresponding to the syllabus of this module of theoretical and practical classes.

Module B: Short and/or multiple-choice questions corresponding to the syllabus of this module of theoretical classes, practical classes and visits.

In both cases, each multiple-choice question will have 4-5 answers, and only one of them is correct: it may be either the true or the false one. This will be advised in the instructions.

The final grade will correspond to the average and proportionality of both modules A and B (50% each). The grades can only be averaged if the value in each module is higher than 4.5 (four point five), otherwise, the subject will be considered as failed.

Success rates in previous years

2020/2021	2021/2022	2022/2023
83.33%	52.63%	93.3%

6. Sustainable Development Goals

- 2 - Zero Hunger
- 9 - Industry, Innovation and Infrastructure
- 12 - Responsible Production and Consumption