



Information about the subject

Degree: Bachelor of Science Degree in Veterinary Medicine

Faculty: Faculty of Veterinary Medicine and Experimental Sciences

Code: 1260409 **Name:** Animal production and genetic improvement I

Credits: 6,00 **ECTS Year:** 4 **Semester:** 1

Module: Module of Animal Production

Subject Matter: Animal Production **Type:** Compulsory

Department: Animal Production and Public Health

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Module of Animal Production

Subject Matter	ECTS	Subject	ECTS	Year/semester
Animal Production	30,00	Animal production and genetic improvement I	6,00	4/1
		Animal production and genetic improvement II	6,00	4/2
		Aquaculture	6,00	4/2
		Economy and Business in the veterinarian domain	6,00	3/2
		Nutrition and animal feeding	6,00	4/1



Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 The student connects the theoretical and practical contents through projects and assignments.
- R2 Basic business concepts with an emphasis on veterinary service businesses and agricultural enterprises.
- R3 Economic fundamentals of the market.
- R4 The student is able to solve problems related to the contents of the module.
- R5 The student searches bibliographic information from different sources and knows how to analyse it with a critical and constructive spirit.
- R6 The student argues according to rational criteria based on his or her work.
- R7 The student analyses the bases of climatization of the farms and the dimensions of pig and poultry production farms.
- R8 The student analyses farms from a multifactorial approach.
- R9 The student broadens his or her knowledge in population genetics and quantitative genetics and includes crossbreeding schemes.
- R10 The student understands genetic analysis of quantitative traits of economic interest and applies it for genetic evaluation of producers and selection methods.
- R11 The student understands genetic improvement schemes in pig, poultry and rabbit farming.
- R12 The student is able to describe monogastric production systems, as well as facilities and accommodation systems.
- R13 The student is able to identify aspects related to the behaviour and management of monogastric animals.
- R14 The student analyses the bases of climatization of the farms and the dimensions of pig and poultry production farms.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB2	Capacity to apply knowledge to work or occupation in a professional way and have the competences that are proved by preparing and arguing topics and problem-solving in their specific field of study.		X		
CB3	Capacity to gather and interpret relevant data usually within their specific field of study and capacity to make judgments that include reflection on relevant social, scientific or ethical issues.		X		
CB4	Capacity to communicate information, ideas, problems and solutions at specialist and non-specialist levels.		X		
CB5	Capacity to develop those learning skills needed to undertake further studies with a high degree of autonomy.		X		
GENERAL		Weighting			
		1	2	3	4
CG0	Capacity to speak well in public.			X	
CG3	Understanding and applying control of animal breeding, management, health, reproduction, protection, and feed as well as improving production.			X	
CG4	Understanding and applying methods and processes for obtaining efficient animal products under optimal conditions and costs, and assessing environmental impacts.		X		
CG5	Understanding and applying laws, regulations and administrative provisions in all areas of the veterinary profession and public health, understanding the ethical implications of health in a changing global context.		X		



SPECIFIC		Weighting			
		1	2	3	4
E44	Knowing and applying the basics of animal production: traditional and modern systems.				X
E45	Knowing and applying raw materials for animal feeding: characteristics, production and preservation.				X
E49	Knowing and applying genetics to health improvement programs.			X	
E50	Knowing and applying strategies and procedures to output.				X
E51	Knowing and applying the fundamentals of livestock facilities and environmental hygiene.				X
E52	Knowing and applying the principles of production and marketing process.		X		
E53	Knowing and applying sustainable development.		X		

TRANSVERSAL		Weighting			
		1	2	3	4
T1	Capacity of analysis, synthesis, implementation of knowledge for problem-solving and decision-making.		X		
T2	Understanding and applying the scientific method to professional practice including evidence-based medicine.	X			
T4	Mastering fluency in oral and written mother tongue communication, listening and responding effectively using a language appropriate to audience and context.			X	
T6	Using information technology to communicate, share, search for, collect, analyze and manage information, especially related to the veterinarian practice.		X		
T7	Ability to adapt to new situations, self-critical ability, being aware of personal limitations and understanding when and where seeking and obtaining advice and professional help.		X		



T8	Efficient and effective work, both independently and as a member of a multidisciplinary team or unit, showing respect, appreciation and sensitivity to the work of others.	x		
T9	Keeping an ethical behaviour in the exercise of given responsibilities toward the profession and society.	x		
T10	Ability to learn, to research, and to be aware of the need to keep knowledge updated, and attending training programs.		x	



Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	60,00%	Written assessment of acquired knowledge and skills. The test may consist of a series of open-ended questions or multiple-choice questions about the theoretical contents of the module and/or practical exercises (problem-solving).
	10,00%	Evaluation of the practical laboratory work, which must demonstrate the competences acquired by the student and his or her ability to use them to solve the different situations and problems that arise in a laboratory; this assessment may consist of one of the following methods, or a combination of several of them: an individual written test, the individual or group performance of a laboratory experience, the delivery of an individual or group report on the work carried out in the laboratory.
	20,00%	Evaluation of group work through a system of continuous assessment throughout the course based on the delivery of assignments the objectives and content of which will be proposed by the teacher.
	10,00%	Evaluation of activities in which the student must do some research individually and structure information related to each of the topics through a system of continuous assessment throughout the course based on the delivery of papers, the objectives and contents of which will be proposed by the teacher.

Observations

Attendance at practices is considered compulsory. During the practical sessions the teacher will control the attendance. Failure to pass the practices for non-attendance, will make it impossible to pass the course as a whole on first call.

For the final grade, the results of the different evaluation activities scheduled are weighted. The evaluation system consists of four parts



1-Written exam will account for 60% of the final grade for the course.

2-evaluation of the practices by written test (it may coincide with the day of the written exam), where questions about basic aspects seen in the practices and in the theoretical sessions will be answered. To pass the course, 50% will be necessary. This evaluation will represent 15% of the final grade for the course.

3-realization of an oral presentation of a group work on articles published in dissemination magazines that will be proposed by teachers. This evaluation will suppose 10% of the final grade of the subject.

4.-Carrying out 3 on-line tasks on the teaching platform or in the classroom. This evaluation will represent 15% of the final grade for the course.

MENTION OF DISTINCTION:

According to Article 22 of the Regulations governing the Evaluation and Qualification of UCV Courses, the mention of "Distinction of Honor" may be awarded by the professor responsible for the course to students who have obtained, at least, the qualification of 9 over 10 ("Sobresaliente"). The number of "Distinction of Honor" mentions that may be awarded may not exceed five percent of the number of students included in the same official record, unless this number is lower than 20, in which case only one "Distinction of Honor" may be awarded.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 On-site training activity aimed primarily at acquiring knowledge acquisition skills. It is characterised by the fact that students are spoken to. Also called master class or exposition, it refers to the oral presentation made by the teacher, (with the support of blackboard, a computer and a projector for the display of texts, graphs, etc.), in front of a group of students. They are expository, explanatory or demonstrative sessions of contents. The size of the group is determined by the limit or physical capacity of the classroom; therefore, it is a single group.
- M2 On-site training activity aimed primarily at obtaining knowledge application and research skills. Knowledge is built through interaction and activities. The activity consists of supervised monographic sessions with shared participation (teachers, students, experts). The size of the group is variable, from one large group to various small groups, with a minimum of 6 students to ensure interaction. The evaluation will be based on follow-up records kept by the teacher. Participation and the development of the capacity to problematize should be taken into account.



- M3 On-site group-work training activity oriented toward problem solving under the supervision of a teacher. It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students, to differentiate it from a master class.
- M4 On-site training activity in groups that takes place in the classroom. It includes working with documents and formulating ideas without handling animals, organs, objects, products, or corpses (e.g., work with articles or documents, clinical case studies, diagnostic analyses, etc.). It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.
- M5 On-site training activity in groups that takes place in the Computer Lab where the computer is used as support for learning. It includes work with computer models, specific software, Web queries, etc. It would correspond to "Animal-free supervised practical work", type e1, from the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.
- M6 On-site training activity in groups carried out in the laboratory. It includes the sessions where the students develop laboratory experiments, make dissections or use the microscopes for the study of histological or histopathological samples actively and autonomously, under the supervision of the professor. It also includes work with healthy animals, objects, products, corpses (e.g., animal handling, bacteriological practices, physiology or biochemistry, meat inspection, etc.). It would correspond to the "Supervised practical non-clinical animal work" type e2 of the European evaluation of EAEVE. The size of the group is variable, in a range of 10 to 20 students.
- M7 On-site training activity that is defined as the clinical practical work developed in the Veterinary Clinical Hospital or clinical centres ascribed to the University, as well as itinerant clinical practices, mainly with ruminants, equids, pigs, birds and aquatic animals. Also included are necropsies, surgical workshops and training in clinical examination techniques or diagnosis with healthy patients. In these practical sessions the student will always work with animals, which can be healthy (e.g. propaedeutic or obstetrics) or clinical cases (individual or collective), including a protocol or work scheme, being supervised by a teacher and assuming the provision of a service. This type of training corresponds to type e3 of the EAEVE European evaluation called "Clinical Training" (strictly hands-on)". The size of the group will be 5 students or fewer.
- M8 A set of on-site training activities carried out by the teacher to provide personalised attention to the student or in small groups with the aim of reviewing and discussing the materials and topics presented in classes, seminars, readings, carrying out projects, etc. The aim is to ensure a truly comprehensive education of the student rather than a mere transfer of information. It is, therefore, a personalized assistance relationship in which the tutor assists, facilitates and guides one or more students in the learning process.



- M9 Set of processes that attempt to evaluate the learning outcomes of students expressed in terms of acquired knowledge, capacities, skills or abilities developed and manifested attitudes. It covers a wide range of activities that can be developed for students to demonstrate their training (e.g. written, oral and practical tests, projects or assignments). It also includes the Official Calls.
- M10 Autonomous training activity, including activities and coursework, bibliographic searches. The results obtained from unsupervised group and teamwork will be evaluated, with particular attention paid at the time of evaluation to the acquisition of specific knowledge development skills through group work.
- M11 Autonomous training activities related to personal study, or the preparation of individual course assignments. The individual preparation of readings, essays, problem solving, papers, reports, etc. will be evaluated through presentations or submissions during theoretical classes, practical classes, seminars and/or tutorials. The evaluation of the submitted papers will consider the structure of the paper, the quality of the documentation, originality, spelling and presentation.

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theoretical lessons (TL) M1	R1, R2, R3, R4	54,00	2,16
Seminars (S) M2	R5, R6, R7, R8, R9, R10, R11, R12, R13	4,00	0,16
Evaluation (Ev) M9	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	2,00	0,08
TOTAL		60,00	2,40

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Individual work M11	R1	90,00	3,60
TOTAL		90,00	3,60



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Unit 1. Introduction to animal production	Topic 1. General. Definitions. Basic concepts Topic 2. Livestock models P1 Exhibition of group work
UD 2. Pig production	Topic 3. Introduction Topic 4. Productive bases Topic 5. Breeding animals: management, facilities and feeding systems Topic 6. fattenning, handling, installations and feeding
UD 3. Poultry production	Topic 7. Current situation and prospects of poultry. Concepts of importance and generalities of the species. Topic 8. Ethnology and applied genetics. Topic 9. Breeding animals: management, facilities and feeding systems Topic 10. Laying systems: management, facilities and feeding systems Topic 11. Fattening system: management, facilities and feeding systems.
Unit 4. rabbit produccion and beekeeping	Topic 12. Production basics and handling Topic 13. Installations Topic 14. Farming handling Topic 15. Beekeeping
Unit 5. Genetic improvement basics	Topic 16. Population genetics Topic 17. Quantitative genetics Topic 18. Selection methods based on additive variance Topic 19. Crossings in improvement programs
UD 6. Selection schemes according specie	Topic 20. Pig breeding schemes Topic 21. Genetic improvement schemes in poultry Topic 22. Genetic improvement schemes in rabbits



Organization of the practical activities:

	Content	Place	Hours
PR1.	rabbit farm	Farm	2,00
PR2.	swine farm	Technical visit	3,00
PR3.	poultry farm	Technical visit	3,00
PR4.	beekeeping	Technical visit	3,00

Temporary organization of learning:

Block of content	Number of sessions	Hours
Unit 1. Introduction to animal production	2,00	4,00
UD 2. Pig production	9,00	18,00
UD 3. Poultry production	6,00	12,00
Unit 4. rabbit production and beekeeping	3,00	6,00
Unit 5. Genetic improvement basics	7,00	14,00
UD 6. Selection schemes according specie	3,00	6,00



References

Basic references

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- D 'Mello, J.P.F. 2000: Farm animal metabolism and nutrition. CABI Publishing.
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Advanced references:

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Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

Situation 1: Teaching without limited capacity (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

Situation 2: Teaching with limited capacity (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

☒ Microsoft Teams

☒ Kaltura



Situation 3: Confinement due to a new State of Alarm.

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

☒

Microsoft Teams

☒

Kaltura

Explanation about the practical sessions:



2. System for Assessing the Acquisition of the competences and Assessment System

ONSITE WORK

Regarding the Assessment Tools:

☒ The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

☐ The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

Comments to the Assessment System: