Universitat Autònoma de Barcelona

2023/2024

Animal Production I

Code: 102625
ECTS Credits: 6

Degree	Type	Year	Semester
2502445 Veterinary Medicine	OB	3	1

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject.
Please note that this information is provisional until 30 November 2023.

Teachers

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Prerequisites

There are no established official prerequisites, but the student must use the knowledge acquired in the Bases of A

Objectives and Contextualisation

The objectives of Integrated Animal Production 1 are:

- To explain the productive factors that most affect the production and

The training objectives of Integrated Animal Production 1 are:

- To know the key factors that mark, now and in the future, the produc
- To know the productive factors that affect the production and quality
- To know the technical benchmarks and to identify critical points of th

This subject participates in the Pilot Test of Teaching in English that is ca

(Demonstrate knowledge of English to communicate orally and in writing in academic and professional contexts)

Competences

- Analyse, synthesise and resolve problems and make decisions.
- Demonstrate knowledge and understanding of structural and functional disorders of the animal organism.
- Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
- Handle the correct protocols and technologies used to modify and optimise different animal production systems.
- Properly evaluate the nutritional status of animals and know how to advise others on breeding and feeding principles.

Learning Outcomes

1. Analyse, synthesise and resolve problems and make decisions.
2. Apply physiological knowledge to production objectives.
3. Demonstrate knowledge of English to communicate both orally and in writing in academic and professional contexts.
4. Describe the concerns of animal waste and its treatment.
5. Evaluate feeding programs: Know how to assess the main methods of animal fodder preparation, conservation and administration.
6. Evaluate the quality of products of animal origin.
7. Evaluate the technical and economic indexes of a farm: recognise problems and offer solutions.
8. Formulate rations for animals in the most conventional situations.
9. Identify and evaluate the factors that affect the production of products of animal origin.
10. Identify the environmental risks associated to the breeding of animal groups.
11. Locate and identify the main producers of foodstuffs of animal origin, as well as their economic dimension.
12. Recognise the basic characteristics of the different stages of livestock production cycles and how they function.
13. Relate agricultural and livestock production with their environmental impacts.
14. Use current feeding systems: Know how to obtain the nutritious value of foodstuffs and calculate animals' nutrition requirements.

Content

SUBJECT INTRODUCTION

Overview of Integrated Animal Production. Objectives and organization.

BLOCK 1: MEAT PRODUCTION

Pig meat production management:

Planning of the production cycle, feeding and reproduction. Management

Chicken meat production management:

Planning of the productive cycle, of the feeding and the reproduction. Ma

Management of the production of beef:

Planning of the production cycle, feeding and reproduction. Management

Physiological bases of meat production.

Chemical composition, structure and quality of meat. Production factors th
Growth and development. Animal factors that affect growth and developr

Obtention and characteristics of the carcass

Transport and sacrifice. The channel and its performance. Factors that a

BLOCK 2: EGG PRODUCTION

Physiological bases of egg formation

Egg formation. Hormonal regulation, ovulatory cycle and photoperiod. Fa

Egg production management

Planning of the production cycle, feeding and reproduction. Management

BLOCK 3: MILK PRODUCTION

Physiological bases of milk production

Composition, characteristics and physico-chemical properties of milk. Mil

Milking

Physiological bases of milking. Basic elements of the operation of the mil

Refrigeration and conservation of milk. Evaluation indexes of the milk obtaining process and corrective measures

Milk production management

Planning of the production cycle, feeding and reproduction. Management

PRACTICES (21 h)

- Milking machine (Farm)
- Quality of products of animal origin (Laboratory)
- Formulation of monogastric feed (Computer room)
- Formulation of rations-ruminants (Computer room)
- Diagnosis of a problem on the farm. Index analysis (Seminar)

Depending on the restrictions imposed by the health authorities due to the

Methodology

The center of the learning process is the student's work. The student learns by working.

The mission of the teaching staff is to help sstudents in this task (1) by providing information or showing the sour
In line with these ideas, and in accordance with the objectives of the subj

1. Master classes:

The student acquires the knowledge of the subject by attending the mast

The master classes are conceived as a fundamentally one-way method of transmitting knowledge from the teach

The content of the theory program will be taught in a non-presential format. The material will be available on the

2. Practical training:

Several practical training classes will be carried out in different environm

Each of them will be used to raise awareness of a specific concept of Animal Production and allows working in d

3. Seminars:

The seminars will allow the presentation and discussion of some aspects

4. Self-learning work:

The student must solve the practical cases and rations presented in eacl
The proposed teaching methodology may undergo some modification de

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Computer classroom practices	6	0.24	3, 8, 14
Farm practice	3	0.12	9
Lab	2	0.08	6
Seminars	10	0.4	1, 2, 7, 3, 4, 13
Theory lessons	32	1.28	2, 4, 10, 9, 11, 12, 13, 6
Type: Autonomous			
Self-learning	35	1.4	1, 2, 7, 5, 4, 10, 9, 12, 13, 14
Study	60	2.4	2, 7, 5, 4, 8, 10, 9, 11, 12, 13, 14, 6

Assessment

The evaluation of the subject will be done as follows:

1. Examination of the theoretical and practical contents of the subject (50%).

2. Milking practices, facilities and environment (6%)

4. Formulation of rations (14%).

5. Egg practices (6%).

6. Work on productive indexes and self-learning (24%)

Attendance and presentation of practical reports on the scheduled date is mandatory.

In order to pass the subject, it is required not to miss more than 1 practice, to present the practical reports, the cases, the rations and the proposed self-study, obtain a minimum of 4/10 in the theoretical exam and achieve with all the activities. evaluation, a final grade equal to or greater than 5.

In the exam period of the last week of the semester, failed exams may be recovered or opt to improve grade.

The student who does not take the exam or does not complete the exercises and practical reports requested will be considered not presented.

Students who opt for the single assessment will have to: 1) present all the assignments and practice reports on the same day as the final theoretical exam, 2) take a single theoretical exam at the end of the course on the agreed date and time; this exam can be written or oral. The conditions to pass the subjects are the same for all students.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam of practical contents	6%	0.5	0.02	1, 2, 7, 5, 4, 8, 10, 9, 12, 13, 14, 6
Exam of theoretical contents	50%	1.5	0.06	1, 2, 7, 5, 3, 8, 9, 11, 12, 14, 6
Feed formulation	14%	0	0	3, 8, 14
Practices	6%	0	0	1, 2, 7, 5, 4, 10, 13
Self-learning	24%	0	0	1, 2, 7, 5, 4, 10, 9, 12, 13, 14

Bibliography

Meat production

Cañeque V., Sañudo C., 2000. Metodología para el estudio de la calidad de la canal y de la carne en rumiantes. Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria. Ministerio de Ciencia y Tecnología. Madrid.

Cañeque V., Sañudo C., 2005. Estandarización de las metodologías para evaluar la calidad del producto (animal vivo, canal, carne y grasa) en los rumiantes. Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria. Ministerio de Educación y Ciencia. Madrid

Encyclopedia of meat sciences: www.sciencedirect.com/science/referenceworks/9780124649705

FEDNA: www.fundacionfedna.org

Grandin T., 2007. Livestock handling and transport (3rd edition). CABI Publishing, Wallingford, UK.

Gregory N. G., Grandin T., 2007. Animal welfare and meat science (2nd edition). CABI Publishing, Wallingford, UK.

INRA 2007. Alimentation des bovines, ovins et caprins: Tables INRA 2007. Quae editions, Paris, France.

Lawrence T.L.J., Fowler V.R., Novakofski, 2012. Growth of farm animals (3rd edition), CABI Publishing, Wallingford, UK.

Everts M.E., Haagsman H.P., te Pas M. F. W., 2004. Muscle development of livestock animals, CABI Publishing, Wallingford (UK).

NRC 1994. Nutrient requirements of poultry. National Academy Press, Washington, D.C., USA

NRC 1998. Nutrient requirements of swine. National Academy Press, Washington, D.C., USA

NRC 2000. Nutrient requirements of beef cattle. National Academy Press, Washington, D.C., USA

NRC 2007. Nutrient requirements of small ruminants. National Academy Press, Washington, D.C., USA

Swatland H. J.,1991. Estructura y Desarrollo de los Animales de Abasto. Ed. Acribia, Zaragoza.

Warriss P.D., 2009. Meat Science (2nd edition), CABI Publishing, Wallingford (UK).

Egg production

Austic R.E., Nesheim M.C. 1994. Producción avícola. El manual moderno, México.

Buxadé C. 2000. La gallina ponedora. Grupo Mundi-Prensa, Madrid.

Castelló J.A., Pontes M., Franco F. 1989. Producción de huevos. Real Escuela Oficial de Avicultura, Arenys de Mar.

Etches R.J., 1998. Reproducción aviar. Acriba, Zaragoza.

IEH. 2003. El libro del huevo. Instituto de Estudios del Huevo, Madrid.

Rose S.P. 2005. Principles of poultry science. CAB international. Oxon, UK.

Sauveur B. 1993. El huevo para consumo. Grupo Mundi-Prensa, Madrid.

Stadelman W.J., Cotterill O.J. 1995. Egg science and technology. Food Products Press,NY, USA.

Thapon J.L., Bourgeois C.M. (Eds.). 1994. L'oeuf et les ovoproduits. Collection sciences et techniques agro-alimentaires. Paris

Yamamoto T. 1997. Hen eggs. Their basic and applied science. CRC Press, UK.

de la Roza B., Martínez A., Argamentería. 2003. El ensilado como método de conservación de forrajes (2003). A. Editorial:Krk ediciones.

Muslera Pardo E. 1991. Praderas y Forrajes: Producción y aprovechamiento(1991). Editorial: Mundi-Prensa.

Milk production

Akers, R.M. 2002. Lactation and the mammary gland. Iowa State Press, Desmoines, IA.

Charron, G. 1986. Les produits laitières. Vol 1. Les bases de la production. Ed. Lavoissier, París.

Luquet, F.M. 1985. Laits et produits laitières. Vol 1. Ed. Lavoissier, París.

Martinet J. & Houdebine, L.M. 1993. Biologie de la lactation. Ed. INRA, París.

NIRD (National Institute for Research in Dairyng). 1983. Ordeño mecánico. Ed. Agropecuaria Hemisferio Sur, Montevideo.

Phillips, C.J.C. 1996. Progress in dairy Science. CAB International, Wallingford, Oxon. UK.

Veisseyre, R. 1988. Lactología técnica (2ª edición). Ed. Acribia, Zaragoza.

Van Horn H.H. & Wilcox, C.J. 1992. Large dairy herd anagement. American Dairy Science Association, Champaign, IL.

Periodical Journals

Animal

British Poultry Science

INRA Productions Animales

Journal of Animal Science

Journal of Dairy Research

Journal of Dairy Science

Meat Science

Mundo Ganadero

Producción Animal

Poultry Science

WEBS

www.agrodigital.com

Meat production

Cañeque V., Sañudo C., 2000. Metodología para el estudio de la calidad de la canal y de la carne en rumiantes. Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria. Ministerio de Ciencia y Tecnología. Madrid.

Cañeque V., Sañudo C., 2005. Estandarización de las metodologías para evaluar la calidad del producto (animal vivo, canal, carne y grasa) en los rumiantes. Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria. Ministerio de Educación y Ciencia. Madrid

Encyclopedia of meat sciences: www.sciencedirect.com/science/referenceworks/9780124649705

FEDNA: www.fundacionfedna.org

Grandin T., 2007. Livestock handling and transport (3rd edition). CABI Publishing, Wallingford, UK.

Gregory N. G., Grandin T., 2007. Animal welfare and meat science (2nd edition). CABI Publishing, Wallingford, UK.

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NRC 1994. Nutrient requirements of poultry. National Academy Press, Washington, D.C., USA

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Warriss P.D., 2009. Meat Science (2nd edition), CABI Publishing, Wallingford (UK).

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Yamamoto T. 1997. Hen eggs. Their basic and applied science. CRC Press, UK.

de la Roza B., Martínez A., Argamentería. 2003. El ensilado como método de conservación de forrajes (2003). A. Editorial:Krk ediciones.

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WEBS

www.agrodigital.com

Software

Spartan Dairy Cattle Formulation (University of Michigan; https://www.canr.msu.edu/spartandairy/)

Swine formulation: "WinFeed" (http://www.winfeed.com/)