



COURSE DETAILS

"INNOVATIVE TECHNOLOGIES FOR SUSTAINABLE LIVESTOCK FARMING"

SSD AGR/19 *

DEGREE PROGRAMME: AGRICULTURAL SCIENCE AND TECHNOLOGY

ACADEMIC YEAR 2021-2022

GENERAL INFORMATION – TEACHER REFERENCES

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GENERAL INFORMATION ABOUT THE COURSE

YEAR OF THE DEGREE PROGRAMME: II

SEMESTER: I

CFU: 6

REQUIRED PRELIMINARY COURSES (IF MENTIONED IN THE COURSE STRUCTURE “ORDINAMENTO”)

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PREREQUISITES (IF APPLICABLE)

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LEARNING GOALS

The aim of the course is to provide students with the tools to understand in depth the aspects of sustainability of animal production in relation to its environmental impact, product quality, and animal welfare. In particular, the course aims at providing the tools to have a thorough understanding of the physiological, behavioral and productive responses of the reared animal species to changes in physiological and management factors. This will allow the student, through the evaluation of critical points of modern farming systems and the application of precision livestock technologies, to develop the ability to identify the relevant aspects of a problem and evaluate possible solutions.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student needs to demonstrate the ability to apply his/her knowledge to the solution of multiple problems related to the intensive and targeted use of innovation in animal production. In particular, the student needs to acquire an adequate mastery of the technical aspects related to the management of livestock and information in relation to the scientific and technological evolution of the sector.

Applying knowledge and understanding

The course is oriented to transmit the skills, and the methodological and operational tools necessary to apply what has been learned in the different areas related to animal production. In particular, the student will be able to understand and use the results of research published in international journals, expanding his professional training on the use of technological innovation for the solution of problems in the management of the whole livestock-farming supply chain.

COURSE CONTENT/SYLLABUS

Introduction to the course content and explanation of examination procedures.

1 CFU. Sustainability: definitions and concepts. The effect of climate change on animals and livestock operations. Principles of physioclimatology applied to animal production. Animal welfare: criteria for its evaluation and certification.

1 CFU. Mitigation strategies of environmental impact of ruminant and monogastric breeding. Pig breeding in intensive and outdoor systems.

1 CFU. Forage production and management of integrated agro-sylvo-pastoral systems.

1 CFU. Principles of precision livestock farming.

1 CFU. Principles of life cycle assessment (LCA) applied to livestock. Water footprint.

1 CFU. Field experience: visiting a local livestock farm. Seminars on specific topics held by professors of the Department

READINGS/BIBLIOGRAPHY

Comportamento e benessere degli animali in produzione zootecnica. De Rosa, Grasso, Napolitano. Aracne Ed.

Allevamento animale e sostenibilità ambientale: i principi. Stefanon, Mele, Pulina. Ed. Franco Angeli

Allevamento animale e sostenibilità ambientale: le tecniche. Stefanon, Mele, Pulina. Ed. Franco Angeli

TEACHING METHODS

Teacher will use lectures for 5 CFU (about 80% of total hours). The field experience, visiting a local livestock farm with the participation to interdisciplinary seminars held by departmental teachers will give 1 CFU

EXAMINATION/EVALUATION CRITERIA

a) Exam type:

Exam type	
written and oral	
only written	
only oral	x
project discussion	
other	

In case of a written exam, questions refer to: (*)	Multiple choice answers	
	Open answers	
	Numerical exercises	

(*) multiple options are possible