| General Information | |
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| Academic subject | Sustainable Animal Husbandries (module of the integrated course: Sustainable Management of Agricultural Systems) |
| Degree course | Sustainable Management and Development of Mediterranean Rural Systems |
| Curriculum | |
| ECTS credits | 3 ECTS (2 ECTS Lectures + 1 ECTS Laboratory or field classes) |
| Compulsory attendance | No |
| Language | Italian |

| Subject teacher | Name Surname | Mail address | SSD |
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| | Angela Gabriella D'Alessandro | angelagabriella.dalessandro@uniba.it | AGR/19 |

| ECTS credits details | | | |
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| Basic teaching activities | | | |

| Class schedule | |
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| Period | First semester |
| Year | Second year of the degree course |
| Type of class | Lecture - Laboratory or field classes - Seminars on specific topics that will be defined during the course |

| Time management | |
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| Hours | 75 |
| In-class study hours | 30 |
| Out-of-class study hours | 45 |

| Academic calendar | |
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| Class begins | 28 September 2020 |
| Class ends | 22 January 2021 |

| Syllabus | |
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| Prerequisites/requirements | Knowledge on the species of livestock and on systems and technologies for their productions, quality characteristics of animal productions and strategies for their qualitative improvement. |
| Expected learning outcomes (according to Dublin Descriptors) | • *Knowledge and understanding*<br>o Knowledge on the relationships among the systems and technologies for livestock production, animal welfare, quality of their products and environment, addressed to the sustainable management of livestock within the different productive chains.<br>• *Applying knowledge and understanding*<br>o Ability to apply breeding techniques in accordance with environmental sustainability, animal welfare and quality of the products.<br>• *Making informed judgements and choices*<br>o Ability to analyse different production systems in relation to the environmental and productive sustainability of livestock.<br>o Ability to design, manage and verify the breeding technologies in order to improve the productive and environmental sustainability of livestock.<br>• *Communicating knowledge and understanding* |

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| | ○ Ability to communicate effectively within a workgroup.<br>○ Ability to communicate effectively with operators and technicians of the production chains, as well as with managers of public and / or private bodies.<br>• *Capacities to continue learning*<br>○ Ability to deepen and update the knowledge of specific and related sectors, following a multidisciplinary approach.<br><br>The expected learning outcomes, in terms of know how and skills, are listed in the Attachment A of the Academic Regulation of the Management and Sustainable Development of Rural Mediterranean Systems Master Program (expressed through the European Describers of the educational qualification; area of interest: Production Disciplines). |
| Contents | ○ Problems of sustainability in livestock production.<br>○ Animal breeding and production. Distribution and consistency of the livestock species. Consumption and demand of foods of animal origin.<br>○ FAO Classification of animal production systems.<br>○ Environmental impact of livestock. Ecological and animal footprint.<br>○ Sustainable animal husbandry.<br>○ Biodiversity in sustainable livestock systems. *In situ* conservation and *ex situ* conservation of animal germplasm (oocytes, semen, embryos).<br>○ Methodology of environmental impact assessment: LCA and farm gate balance systems.<br>○ The organic and precision animal breedings. |
| Course program | |
| Bibliography | • Notes of the lectures handed out during the course.<br>• E. Baldelli. La Zootecnia Bioecologica. Edagricole.<br>• Modelli Zootecnici ai fini della sostenibilità. Consiglio per la Ricerca e la Sperimentazione in Agricoltura (CRA), 2009.<br>• G. M. Crovetto, A. Sandrucci. Allevamento Animale e Riflessi Ambientali. Edito a cura della Fondazione Iniziative Zooprofilattiche e Zootecniche – Brescia, 2010.<br>• Hafez E. Biologia e tecnologia della riproduzione nelle specie animali di interesse zootecnico. Ed italiana a cura di Seren E. Bono G. Tamanini C. Grasso Bologna. |
| Notes | |
| Teaching methods | Lectures will be given with the support of PC assisted tools (PowerPoint slides), in depth video showing, group works and technical visits to livestock farms. |

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| Assessment methods | For students enrolled in the academic year in which teaching is carried out, there is a mid-term exam consisting in an oral test on arguments developed during theoretical and theoretical-practical lesson hours. The outcome of this test contributes to the evaluation of the final exam and is valid for one academic year. Students who fail the first mid-term exam must attend the general exam.<br>The exam consists of an oral test related to the subjects on the syllabus covered during the theoretical and theoretical/practical lessons in classroom and production farms, as stated in the Academic Regulation of the of the Management and Sustainable Development of Rural Mediterranean Systems Master Program (art. 10) and its relative study plan (Attachment A).<br>The student competence evaluation, in both mid-term and final exam, is based on predefined criteria, as detailed in Attachment A of the Academic Regulation of the Master Program.<br>Please note that in order to take the second mid-term exam, students must have passed the first one. Students who fail the first mid-term exam must attend the general exam.<br>For the final exam, the student will present, in written or oral form, a deepining subject on a topic of the course, assigned by the teacher.<br>Final grade for students taking both mid-term and final exam is determined by the arithmetic average of the two grades. |
| Evaluation criteria | • *Knowledge and understanding*<br>o Level of details in the description of existing relationships among systems and technologies of livestock husbandries, animal welfare, quality of the products and the environment, within the different production chains.<br>o Level of insight in describing the breeding systems addressed to the improvement of the productive and environmental sustainability.<br>• *Applying knowledge and understanding*<br>o Methodological approach in describing issues related to the sustainability of the livestock productions.<br>o Capacity to assess the environmental impact of livestock production systems.<br>o Finding of functional management of livestock production systems according to sustainability criteria.<br>• *Making informed judgements and choices*<br>o Ability to analyse different production systems in terms of sustainability.<br>o Capacity to design, manage and verify sustainable breeding technologies of livestock for the quantitative and qualitative improvement of the productions.<br>• *Communicating knowledge and understanding*<br>o Effectiveness and clarity in the exposure of the topics.<br>• *Capacities to continue learning*<br>o Level of in-depth and of multidisciplinary linkage of the knowledge in the topics discussed. |
| Official consulting hours | From Monday to Thursday, h 15:00 – 17:00 by appointment. |