

<b>Academic subject: Sustainable and Precision Livestock Farming</b>			
<b>Degree Class:</b> L-38		<b>Degree Course:</b> Animal Science	
		<b>Academic Year:</b> 2020/2021	
		<b>Kind of class:</b> optional	
		<b>Year:</b> III	
		<b>Period:</b> II semester	
		<b>ECTS: 3</b> divided into <b>ECTS lessons: 2</b> <b>ECTS</b> <b>exe/lab/tutor: 1</b>	
<b>Time management, hours, in-class study hours, out-of-class study hours</b> lesson:20    exe/lab/tutor: 25    in-class study: 0    out-of-class study: 30			
<b>Language:</b> Italian		<b>Compulsory Attendance:</b> yes	
<b>Subject Teacher:</b> Pasquale De Palo		<b>Tel:</b> +39 0804679919 <b>e-mail:</b> <b>pasquale.depalo@uniba.it</b>	
		<b>Office:</b> Department of Veterinary Medicine Room    35    Floor II	
		<b>Office days and hours:</b> Tuesday 4p.m. —6 p.m. Thursday 4p.m. —6 p.m. Recommended planning meeting by mail	
<b>Prerequisites:</b> The student must already be in possession of the knowledge relating to Animal Nutrition and Feeding, the Physiology and Ethology of farm animals, as well as breeding techniques. Therefore, it is necessary that the student has at least attended the relevant courses with particular attention.			
<b>Educational objectives:</b> The course aims to provide students with useful information for evaluating the environmental, economic and social impacts of the various forms of animal breeding and provide the basics on Precision Livestock farming techniques, providing an insight into the state of the art and future prospects of this new discipline			
<b>Expected learning outcomes (according to Dublin Descriptors)</b>		<p><b>Knowledge and understanding:</b> Knowing how to recognize the variables affecting the impacts, knowing how to recognize the advantages and disadvantages of a PLF system, knowing the theoretical bases and precision animal husbandry systems applied to the various farming models</p> <p><b>Applying knowledge and understanding:</b> to be able to estimate the environmental, social and economic impacts of each farming model, as well as of each farm management choice, knowing how to recognize the various inputs and outputs of a livestock system. Knowing how to use the right categories of PLF systems based on the needs highlighted by a farmer. Knowing how to advise the breeder also in relation to the impact of his activity as well as on the correct use, from choice to data management, in the PLF area.</p> <p><b>Making judgements:</b> provide the knowledge bases necessary to allow the student to propose and make decisions aimed at improving the impact and improving management in a livestock farm</p> <p><b>Communication:</b> know the scientific technical terminology of the sector necessary to communicate the topics covered by the subject</p> <p><b>Lifelong learning skills:</b> receive the knowledge bases to be able to deepen the issues covered by the subject</p>	

**Course program:** Concepts of livestock production efficiency and environmental, social and economic impact. Greenhouse gases. Harmful gases. Impact of nitrogen excretions. Agro-ecosystem impact of grazing. Impact reduction strategies and case studies. Carbon footprint. Water Footprint. Calculation techniques (Life Cycle Analysis) of the impacts. Precision Livestock Farming, classification and case studies on PLF systems in the management of livestock food production, animal feeding, reproductive and productive monitoring, animal welfare, milking, traceability of production.

**Teaching methods:** The few lectures will be accompanied by the presentation of case studies. Furthermore, training will be carried out with in-field visits and seminars held by technicians from companies from the PLF field.

**Auxiliary teaching:** Computer equipment and softwares

**Assessment methods:** The final exam takes place in oral form. The student will be asked two questions, one relating to the environmental impact and one to the PLF. He will have to achieve a sufficient assessment for both thematic areas to pass the exam. The questions may be aimed at assessing knowledge. Often cases or data will be presented to the student asking him a critical assessments.

**Bibliography:** Material provided by the teacher both during the course and available at the end of the course at his office.