

ACADEMIC YEAR 2023/2024

General information	
Academic subject	PHYSICAL AND SENSORY ASSESSMENT OF LIVESTOCK PRODUCTION (integrated exam of CHEMICAL AND PHYSICAL EVALUATION OF FOOD PRODUCTS)
Decree course	Foods of animal origin safety and health - (LM86)
202/2023	2023/2024 – I year
European Credit Transfer and Accumulation System (ECTS):	5 (4+1E)
Language	Italian
Academic calendar (starting and ending date)	I semester
Attendance	Not mandatory

Professor/Lecturer	
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Department and address	Campus of Veterinary Medicine, S.P. 62 to Casamassima km 3, 70010 Valenzano (Ba)
Virtual headquarters	
Tutoring (time and day)	It is preferable to contact the professor via email or Teams for planning the activities.

Syllabus	
Learning objectives	The course aims to provide the student with a general and particular view of the qualitative patterns related to sensory properties of livestock food. Particularly, the student will acquire knowledge, skills and abilities on most suitable techniques for sensory assessment, the ability in data interpretation, know-how to organize consumer and panel tests, develop actions to improve food from rheological@sensorial point of view.
Course prerequisites	The student must have a good knowledge on organic chemistry, principles of general physics and statistics. To this end, a self-assessment test will be provided at the beginning of the course which will serve to indicate to students which areas deserve to be explored for greater effectiveness of the course.
Contents	<p>Fundamentals of Sensory and Physical properties of food: (1 ECTS). Definition and Aims of teaching in the context of the Degree Course. Notes on the physiology of the sense organs and the relationship between human perception and instrumental evaluation.</p> <p>Food Rheology: (1 ECTS) - The marbling grading; - Color: myoglobin biochemistry, factors affecting color, Hornsey method, instrumental colorimetry, Image Analysis - Texture in meat and cheese: Warner Blatzer Share Force and Texture profile analysis (tenderness, juiciness, cohesiveness, chewability, adhesiveness, gumminess) - The water fractions in fresh meat and the effects on rheology: Water Holding Capacity, post thawing losses, cooking losses, drip losses. - Milk clotting properties.</p> <p>Lab sensory Analysis (1 ECTS): - Chemistry and biochemistry of volatile fractions in milk: animal and technological factors capable of affecting it; analytical laboratory techniques.</p> <p>Sensory Analysis using human assessors: (1 ECTS) Panel and Consumer Test: Recruitment, selection and training of panelists. Analytical and affective tests.</p>



	Qualitative discriminative tests: pairwise, triangular, duo-trio comparison, two out of five. Sorting test. The measurement scales. Descriptive tests: profile analysis (FPM) and descriptive quantitative analysis (QDA). Lab training (1 ECTS): these activities will be carried out in the second half of the course. The activities aim to allow student to carry out lab techniques for rheological evaluation and sensory analysis in livestock productions
Books and bibliography	Lessons minutes and materials furnished by the professor during lessons available at the end of the course for non-attending students; - Slides (available on Google Drive) - E. Pagliarini –Valutazione sensoriale: aspetti teorici, pratici e metodologici. Hoepli editore, Milano, 2002 - Research Guidelines for cookery, sensory evaluation, and instrumental tenderness measurements of meat. American Meat Science Association, version 1.0, 2015
Additional material	

Work schedule			
hours			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
125	32	15	78
CFU/ETCS			
5	4	1	

Teaching strategy	The course will be based on 40h of traditional lectures, enriched by innovative activities: self-assessment of learning, co-teaching lessons with foreign visiting professors, flipped classroom, elaboration of works in groups. Moreover, 25 hours of training will be carried out in laboratory to acquire skills and competences on food textural, sensory evaluation

Expected learning outcomes	
Knowledge and understanding on:	The student must be able to <ul style="list-style-type: none"> know fundamentals related to sensory, physiology and psychology of consumers, laboratory and human-based techniques to measure sensory patterns, as well as the factors affecting rheological-sensory parameters
Applying knowledge and understanding on:	The student will be able to: <ul style="list-style-type: none"> choose the best tool for evaluating a sensory pattern, on the basis of the type of food matrix and the objectives to be pursued. Conduct evaluation from planning to data interpretation
Soft skills	<p>Making informed judgments and choices</p> <ul style="list-style-type: none"> provide the knowledge bases necessary to allow the student to propose and make decisions aimed at characterizing and improving sensory profile in food of animal origin Ability to analyze test day controls reports <p>Communicating knowledge and understanding</p> <ul style="list-style-type: none"> know the scientific technical terminology of the sector necessary to communicate the topics covered by the subject Capacities to continue learning <p>Lifelong learning skills</p> <ul style="list-style-type: none"> Ability to find technical information through bibliographic research or through contacts with public and private bodies...

Assessment	
Methods of assessment	The exam is conducted orally, with no more than three questions, relating to case studies, any problems that an agri-food company may pose. The overall assessment will take in account the candidate's ability to use the knowledge and skills acquired to solve the problems posed. The vote of the course of Physical and Chemical quality of Food will be the arithmetic mean between the present subject assessment and the one of Food Chemistry.I".
Evaluation criteria	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> • <i>To know the theoretical fundamentals of rheologic and sensory analysis in livestock productions</i> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> • <i>Being able to formulate a personal evaluation plan on the basis of the needs of supply chain for assessing and improving sensory quality of a livestock product</i> <p><i>Autonomy of judgment</i></p> <ul style="list-style-type: none"> • <i>Being able to formulate a personal judgment on a sensory and rheologic assessment procedure, from planning to results interpretation</i> <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> • <i>Knowing how to use specific technical terminology appropriately</i> <p><i>Communication skills</i></p> <ul style="list-style-type: none"> • <i>Knowing how to use specific technical terminology appropriately</i> <p><i>Capacities to continue learning o</i></p> <ul style="list-style-type: none"> • <i>Demonstrate knowledge of the available sources to find useful data and information</i>
Criteria for assessment and attribution of the final mark	The final grade is awarded out of thirty. The exam is passed when the grade is greater than or equal to 18. The final grade of the integrated exam is the result of the weighted average of the marks obtained for each of the courses. In any case, the student must acquire a mark greater than or equal to 18/30 for each part of the exam relating to the three courses
Additional information	