UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

Consiglio di Interclasse L-26 e LM-70

General information		
Academic subject	**Milk and Dairy Technology (C.I. Technology of Olive Oil, Milk and Dairy Products)**	
Degree course	*Food Science and Technology (L26)*	
Academic Year	*Third*	
European Credit Transfer and Accumulation System (ECTS)		5 ECTS
Language	*Italian*	
Academic calendar (starting and ending date)	*September 26th, 2022 – January 20th, 2023*	
Attendance	*No Compulsory*	

Professor/ Lecturer	
Name and Surname	Michele Faccia
E-mail	michele.faccia@uniba.it
Telephone	0805442939
Department and address	*DIP. DISSPA – Università degli Studi di Bari*
Virtual headquarters	*Microsoft teams*
Tutoring (time and day)	Monday-Friday 9.00-16.00

Syllabus	
Learning Objectives	*The student will acquire knowledge and skills on the raw matter, processes, finished product, chemical and sensory analyses in the dairy field*
Course prerequisites	*Prerequisites: Chemistry; Unit operations of food technology*
Contents	**Raw matter** Milk production at national and international level; chemical composition of milk; physical-chemical properties; microorganisms involved in the dairy processes; EU regulations for milk and milk processing **Dairy industry** Importance of the dairy industry at national and international level; general information; production technology, legislation and quality of bottled milk. Cheesemaking (general part): milk coagulation, use of starters, in-vat and out-of-vat operations, storing and ripening of cheese. Cheese defects. Other dairy products: production of milk cream, butter and ricotta. Cheesemaking (second part): cheese classification. Technology of pasta filata cheeses. PDO and PGI Apulian cheeses. Case study: PDO Mozzarella of Gioia del Colle and PGI Burrata of Andria **Management of dairy wastes** Technological characteristics and composition, environmental impact, legislation and technologies for waste disposal or valorisation. Case study: the problem of dairy wastes in Puglia. **Milk from other animal species** Goat, sheep, and waterbuffalo milk and related cheesemaking technologiesEsercitazioni **Practical classes** Coagulation of milk by acidification and addition of rennet; analyses of milk and cheese macro constituents; cheese sensory analysis; main frauds in the sector. Educational tour in dairy farm and/or industrial dairy
Books and bibliography	*Ottavio Salvatori dal Prato. "Manuale di Tecnologia Casearia" – Edagricole, Bologna; G. Mucchetti, E. Neviani. "Microbiologia E Tecnologia Lattiero-Casearia". Tecniche Nuove, Milano.*
Additional materials	*Notes, slides and other bibliographic materials will be furnished during the course*

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/Self-study hours
Hours			
125	*32*	*14*	*79*
5			
5	*4*	*1*	

Teaching strategy	*Lectures will be presented through PC assisted tools (PowerPoint, video). Field and laboratory classes, reading of regulations, educational tour in dairy farm and/or industrial dairy* *Lecture notes and educational supplies will be provided by means of online platforms*
Expected learning outcomes	The expected learning outcomes, in terms of both knowledge and skills, are provided in Annex A of the Academic Regulations of the Degree in Food Science and Technology (expressed through the European Descriptors of the qualification)
Knowledge and understanding on:	○ Understanding the practical aspects of milk heat treatments and cheesemaking ○ Competence in using the suitable analytical techniques to evaluate quality, safety and typicality of dairy products ○ Understanding the use of additives, carriers and starters in cheesemaking
Applying knowledge and understanding on:	○ Understanding the practical aspects of milk heat treatments and cheesemaking ○ Competence in using the suitable analytical techniques to evaluate quality, safety and typicality of dairy products ○ Understanding the use of additives, carriers and starters in cheesemaking
Soft skills	• *Making informed judgments and choices* ○ Understanding the practical aspects of milk heat treatments and cheesemaking ○ o Competence in using the suitable analytical techniques to evaluate quality, safety and typicality of dairy products ○ o Understanding the use of additives, carriers and starters in cheesemaking • *Communicating knowledge and understanding* ○ Ability to describe the chemical and biochemical events on which the dairy industry is based • *Capacities to continue learning* ○ Ability to describe the chemical and biochemical events on which the dairy industry is based
The expected learning outcomes, in terms of both knowledge and skills, are provided in Annex A of the Academic Regulations of the Degree in Food Science and Technology (expressed through the European Descriptors of the qualification).	

Assessment and feedback	
Methods of assessment	The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in the laboratory/production plants, as reported in the Academic Regulations for the

	Bachelor Degree in Food Science and Technology (article 9) and in the study plan (Annex A). Students attending at the lectures may have a middle-term preliminary exam, consisting of a written test, relative to the first part of the program, which will concur to the final evaluation and will be considered valid for a year. The evaluation of the preparation of the student occurs based on established criteria, as detailed in Annex B of the Academic Regulations for the Bachelor Degree in Food Science and Technology. Non-Italian students may be examined in English language, according to the previously mentioned procedures.
Evaluation criteria	*Knowledge and understanding* o Knowledge of the main physico-chemical characteristics of milk constituents, of the changes they undergo during the technological treatments, and of the interactions with the microorganisms *Applying knowledge and understanding* o Knowledge of the interactions among raw matter, microorganisms and technological treatments in the dairy industry *Making informed judgements and choices* o Making sound hypothesis for evaluating the characteristics and quality of processing/products presented as a case study *Communicating knowledge and understanding* o Describing the relationships existing between milk constituents and physico-chemical phenomenon that take place during milk processing, together with the characteristics of the products in connection with the processing method that has been applied *Capacities to continue learning* o Making hypothesis for a suitable approach for evaluating the chemical and sensory characteristics of a cheese as a case study
Criteria for assessment and attribution of the final mark	The evaluation criteria that contribute to the attribution of the final mark will be: knowledge and understanding, the ability to apply knowledge, autonomy of judgment, i.e. the ability to criticize and formulate judgments, communication skills
Additional information	Monday-Friday by previous agreement by e-mail