

General information	
Academic subject	Dairy Products Technology (I.C. Principles of food technologies)
Degree course	Food Science and Technology (L26)
ECTS credits	5 (4 lectures + 1 practical classes)
Compulsory attendance	No
Teaching language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Michele Faccia	michele.faccia@uniba.it	AGR/15

ECTS credits details	
Basic teaching activities	4 ECTS Lectures 1 ECTS Laboratory or field classes

Class schedule	
Period	I semester
Course year	Third
Type of class	Lectures Practical classes Educational tours

Time management	
Hours	126
In-class study hours	46
Out-of-class study hours	80

Academic calendar	
Class begins	September 30 th , 2019
Class ends	January 17 th , 2020

Syllabus	
Prerequisites/requirements	Prerequisites: "Chemistry" and "Unit operations of food technology" Requirements: General, inorganic and organic chemistry. Food constituents. Animal Husbandry. Food machines and plants.
Expected learning outcomes	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Understanding the chemical and biochemical phenomenon that are involved in milk processing ○ Understanding the basic aspects of chemical and sensory analyses useful for evaluating quality of dairy products <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ 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 <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> ○ Making a right judgment on the right solutions for modifying the quality characteristics and environmental sustainability of dairy products ○ Ability in correctly addressing the choice of the suitable analytical techniques to monitor the quality characteristics of dairy products <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to describe the chemical and biochemical events on which the dairy industry is based <p><i>Capacities to continue learning</i></p>

	<ul style="list-style-type: none"> ○ Ability in deepening and updating knowledge about new processing technologies and products, and new tools for controlling quality in the dairy field
Contents	<p>Milk: production and use in Italy and worldwide; milk composition: quantitative and qualitative aspects; physical-chemical properties of milk; importance of microorganisms in milk and dairy technology; basic legislation for milk production and dairy processing</p> <p>Dairy industry: general information; production technology, legislation and quality of bottled milk</p> <p>Cheesemaking (general part): milk coagulation, use of starters, in-vat and out-of-vat operations, storing and ripening of cheese</p> <p>Other dairy products: production of milk cream, butter and ricotta.</p> <p>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.</p> <p>Cheesemaking (second part): cheese classification. Technology of pasta filata cheeses. PDO and PGI Apulian cheeses. Case study: PGI Burrata of Andria</p> <p>Milk from other animal species: goat, sheep, and waterbuffalo milk and related cheesemaking technologies</p> <p>Practical classes: coagulation of milk by acidification and addition of rennet; analyses of milk and cheese macro constituents; cheese sensory analysis</p> <p>Educational tour in dairy farm and/or industrial dairy</p>
Course program	
Reference books	<ul style="list-style-type: none"> • Lecture notes and other educational materials distributed during the classes • Ottavio Salvatori dal Prato. "Manuale di Tecnologia Casearia" – Edagricole, Bologna
Notes	
Teaching methods	<p>The lectures will be given with the aid of Power Point presentations, video clips, practical classes at the laboratory or in the classroom, reading out of legislative texts, educational tour in dairy farm and/or industrial dairy</p> <p>Lecture notes and educational supplies will be provided by means of a mailing list or online platforms (i.e.: Edmodo, Google Drive...)</p>
Evaluation methods	<p>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).</p> <p>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.</p> <p>The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex B of the Academic Regulations for the Bachelor Degree in Food Science and Technology.</p> <p>Non-Italian students may be examined in English language, according to the aforesaid procedures.</p>
Evaluation criteria	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ 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

	<p>microorganisms</p> <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Knowledge of the interactions among raw matter, microorganisms and technological treatments in the dairy industry <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> ○ Making sound hypothesis for evaluating the characteristics and quality of processing/products presented as a case study <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ 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 <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> ○ Making hypothesis for a suitable approach for evaluating the chemical and sensory characteristics of a cheese as a case study
Receiving times	Monday-Friday by previous agreement by e-mail