General information	
Academic subject	Food Biochemistry
Degree course	*Food Science and Technology (L26)*
Academic Year	*Second*
European Credit Transfer and Accumulation System (ECTS)	6 ECTS
Language	*Italian*
Academic calendar (starting and ending date)	*September 26th, 2022 – January20th, 2023*
Attendance	*Not Compulsory*

Professor/ Lecturer	
Name and Surname	Carmine Crecchio
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Department and address	*DiSSPA*
Virtual headquarters	*Microsoft Teams*
Tutoring (time and day)	Monday-Friday 9.00-16.00

Syllabus	
Learning Objectives	*The course aims to furnish knowledge on the main metabolisms of animal and plants and on the main biochemical techniques.*
Course prerequisites	*Basic knowledge in general and organic chemistry and in cell biology.* *Prerequisites: "Elementi di chimica".*
Contents	*Adsorption, anabolism and catabolism of glucids.* *Adsorption, anabolism and catabolism of lipids.* *Adsorption, anabolism and catabolism of proteins.* *Adsorption, anabolism and catabolism of vitamins.* *Photosynthesis.* *N cycle in plants.* *Main biochemical techniques: centrifugation, electrophoresis, cell lysis.*
Books and bibliography	Slides used during the course. Pinton, Cocucci, Nannipieri, Trevisan: Fondamenti di Biochimica Agraria, 2016, Patron Editore, Bologna Principi di Biochimica – Settima edizione, Nelson, Cox – Zanichelli. Introduzione alla Biochimica di Lehninger – Sesta Edizione Nelson, Cox – Zanichelli. Wilson, Walker. Biochimica e biologia molecolare – Principi e tecniche. Raffaello Cortina Ed. Wilson, Walker. Metodologia biochimica: le bioscienze e le biotecnologie. Raffaello Cortina Ed.
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			
150	*32*	*28*	*90*
ECTS			

6	4	2	
Teaching strategy		*Lectures will be presented through PC assisted tools (PowerPoint, video). Field and laboratory classes, reading of regulations will be experienced.* *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:		Food biochemistry and cell metabolisms.	
Applying knowledge and understanding on:		• Application of the knowledge of the biochemical systems in which animal and plant systems operate.	
Soft skills		• *Making informed judgments and choices* • Capacity to use the acquired information to be used for further studies. • *Communicating knowledge and understanding* • Capacity to describe the main pathways of food in animal and plant systems. • *Capacities to continue learning* • Capacity to upgrade at higher levels the knowledge relative to the food biochemistry.	

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 Master 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 on the basis of established criteria, as detailed in Annex B of the Academic Regulations for the Master Degree in Food Science and Technology. Non-Italian students may be examined in English language, according to the aforesaid procedures.
Evaluation criteria	• *Knowledge and understanding* Describe the main metabolic pathways in animal and plants. • *Applying knowledge and understanding* Describe the importance of biochemistry to evaluate the functions of eukaryotic organisms • *Autonomy of judgment* The student will be able to express reasonable hypotheses about the functions of eukaryotic organisms. • *Communicating knowledge and understanding* Capacity to describe the fate of biomolecules contained in food. • *Communication skills*

	The student will be evaluated considering the use of appropriate technical language. • *Capacities to continue learning* Capacity to use and apply the biochemical background to improve the knowledge of metabolic pathways of food-.	
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		