

General information	
Academic subject	Environmental biochemistry
Degree course	Environmental Biology
Academic Year	First
European Credit Transfer and Accumulation System (ECTS)	5
Language	Italian
Academic calendar (starting and ending date)	Second semester (March 2022 - June 2022)
Attendance	compulsory

Professor/ Lecturer	
Name and Surname	Paola Anna Maria Loguercio Polosa
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Virtual headquarters	Teams 05o7x1x
Tutoring (time and day)	Agree location, date and time with the teacher by email.

Syllabus	
Learning Objectives	Acquisition of advanced theoretical and practical knowledge of biochemistry related to the biotic component of an ecosystem.
Course prerequisites	Knowledge of general, inorganic and organic chemistry, biochemistry and molecular biology
Contents	The biochemistry of nitrogen organization. The production of reactive oxygen and nitrogen species; oxidative stress and cellular defense systems. The metabolism of exogenous substances. Genotoxicity tests. Protein purification. Quantitation of substances and enzymes with enzymatic assays.
Books and bibliography	- I PRINCIPI DI BIOCHIMICA DI LEHNINGER, Nelson e Cox, Zanichelli. - METODOLOGIA BIOCHIMICA, a cura di K. Wilson e J. Walker, Raffaello Cortina editore
Additional materials	Integrate with lesson notes. Images of PowerPoint slides projected during the lessons are available.

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
125	36	6	83
ECTS			
5,0	4,5	0,5	
Teaching strategy		Lessons are in presence but, in the event of a health emergency, they can be delivered online or in mixed mode. In all cases, projection of slides in PowerPoint, networking and writing on the whiteboard (real or virtual) will be used.	
Expected learning outcomes			
Knowledge and understanding on:		<ul style="list-style-type: none"> ○ Acquisition of advanced theoretical and practical knowledge of biochemistry related both to the biotic component of an ecosystem and modern study methods. 	

Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Solid acquisition, thanks to the attendance of lectures and laboratory exercises, of skills in the field of biochemical and biomolecular methodologies applied both to the analysis of environmental pollutants and to environmental research.
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Acquisition of autonomy in areas related to both the evaluation and interpretation of experimental data, and the application of techniques for the study of environmental biochemistry. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Acquisition of the appropriate lexicon and terminology, in order to understand and communicate clearly the contents of the discipline • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Acquisition of skills that favour the development, study and constant updating of biochemical knowledge in relation to the surrounding environment, with particular reference to the consultation of bibliographic material and databases.
Assessment and feedback	
Methods of assessment	Oral interview on topics of the course. Since the course often refers to biochemical reactions and metabolic patterns, the use of writing is also required where appropriate.
Evaluation criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ The critical acquisition of the contents of the course is evaluated • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ The ability to integrate the knowledge learned in the course with those of related disciplines delivered in previous years is assessed. • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ The student's ability not to stop at the notion but, rather, to grasp the meaning of the disciplinary contents is evaluated. In this way the study becomes an opportunity to increase the knowledge and culture of the course. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ The student's ability to spread the course contents is assessed. • <i>Communication skills</i> <ul style="list-style-type: none"> ○ The property of language and the clarity of the exposition are evaluated. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ The ability to deepen the knowledge of the course independently is assessed, with particular reference to the consultation of bibliographic material, databases and other online information.
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. In the assessment, transversal skills are taken into account. To achieve a high evaluation, the student must show adequate argumentation and presentation skills.
Additional information	