



ENVIRONMENTAL MICROBIOLOGY

Enrollment year	2021/2022
Academic year	2021/2022
Regulations	DM270
Academic discipline	BIO/19 (GENERAL MICROBIOLOGY)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	EXPERIMENTAL AND APPLIED BIOLOGY
Curriculum	Biologia ambientale e biodiversità
Year of study	1°
Period	2nd semester (01/03/2022 - 14/06/2022)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	PASCA MARIA ROSALIA (titolare) - 6 ECTS
Prerequisites	The understanding of some topics of the course assumes the knowledge of the basic concepts of chemistry and microbiology, which will be recalled during the first lessons.
Learning outcomes	The objectives of the course are: 1. Studying the presence of microorganisms in different environments; 2. To know the application of microorganisms in solving environmental problems such as wastewater treatment and bioremediation.
Course contents	The world of microorganisms. The adaptation of microorganisms to natural environment. The microorganisms in different environments: atmosphere, hydrosphere, soil and extreme environments. Interactions between microorganisms and other organisms. Genetically modified microorganisms for the environmental biotechnology. Methods in Environmental Microbiology.

	<p>Environmental problems and applications in environmental protection: biodeterioration of handworks, biological treatment of sewage, bioremediation of contaminated sites, air biofiltration, bio-restauration. Production of biofuels, bioplastics, bioinsecticides.</p> <p>Some laboratories activities.</p>
Teaching methods	The course is divided into lectures and laboratory activities.
Reccomended or required readings	Barbieri P, Bestetti G, Galli E, Zannoni D. 2008. Microbiologia ambientale ed elementi di ecologia microbica. Casa Editrice Ambrosiana.
Assessment methods	<p>The oral exam will be divided into two parts:</p> <ol style="list-style-type: none"> 1. Oral presentation of about 10 minutes by projection of slides on a scientific publication in English (chosen by the student and validated by the teacher) concerning one of the topics addressed during the course. 2. The second part of the oral exam will focus on the rest of the topics covered during the course, to assess the student's overall knowledge of the subject.
Further information	<p>The oral exam will be divided into two parts:</p> <ol style="list-style-type: none"> 1. Oral presentation of about 10 minutes by projection of slides on a scientific publication in English (chosen by the student and validated by the teacher) concerning one of the topics addressed during the course. 2. The second part of the oral exam will focus on the rest of the topics covered during the course, to assess the student's overall knowledge of the subject.
Sustainable development goals - Agenda 2030	