General information	
Academic subject	**PLANTS FOR ENVIRONMENTAL RESTORATION**
Degree course	*Biology Science and Environmental Biology*
Academic Year	*2021-2022*
European Credit Transfer and Accumulation System (ECTS)	4
Language	*Italian*
Academic calendar (starting and ending date)	*Second Semester (April-May)*
Attendance	*Yes*

Professor/ Lecturer	
Name and Surname	Stefania Fortunato
E-mail	stefania.fortunato@uniba.it
Telephone	
Department and address	*Department of Biology- Plant biology*
Virtual headquarters	
Tutoring (time and day)	By e-mail appointment

Syllabus	
Learning Objectives	*To know and understand the basic notions about phytoremediation. To know and understand the physiological characteristics of plants is helpful for environmental remediation. To know and understand the potential of plants in the remediation of air, water and soil.*
Course prerequisites	*Knowledge of botany, biochemistry and plant physiology*
Contents	*Environmental contaminants (soil, air and water) in phytoremediation target; basic principles of phytoremediation processes: phytostabilization, phytostimulation, phytodegradation, phytovolatilization, phytoextraction, phytodepuration. Plant organisms suitable for phytoremediation interventions. Biochemical and molecular principles of detoxification of organic and inorganic contaminants in plants. Plants genetically modify for the improvement of environmental remediation. Experimental examples of soil, water and air phytoremediation.*
Books and bibliography	*All the teaching material presented in class will be made available to the student in electronic format*
Additional materials	

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
	32	*0*	
ECTS			
	4		
Teaching strategy			
	Lectures are the main teaching method.		
Expected learning outcomes			
Knowledge and understanding on:	o Knowledge of the biochemical and physiological mechanisms for removing contaminants from plants.		

Applying knowledge and understanding on:	o Knowledge of the practical use of plants in environmental remediation

Soft skills	• *Making informed judgments and choices*
	  o Ability to evaluate and interpret experimental data
	• *Communicating knowledge and understanding*
	  o Acquisition of skills and adequate tools for communication through(the disciplinary lexicon
	• *Capacities to continue learning*
	  o Ability to make connections in the field of plant physiology
	  o Ability to access bibliographic sources and updated databases

Assessment and feedback	
Methods of assessment	*The student will have to take an oral interview.*

Evaluation criteria	• *Knowledge and understanding*
	  o The student must demonstrate the ability the discussion about phytoremediation
	• *Applying knowledge and understanding*
	  o Assessment of the ability to identify an efficient strategy for phytoremediation
	• *Autonomy of judgment*
	  o Assessment of the ability to understand and evaluate experimental data
	• *Communicating knowledge and understanding*
	  o The student must be demonstrating the ability to use a correct scientific language
	  o Assessment of the ability to discuss about the phytoremediation
	• *Capacities to continue learning*
	  o Assessment of the acquisition of the ability to make connections in the field of plant physiology

Criteria for assessment and attribution of the final mark	*Exam with a mark out of 30, 18 is the minimum passing grade. At least one topic proposed among the course contents will be discussed*
Additional information	