

General Information	
Academic subject	Integrated Course Environmental Restoration Module: Waste Management
Degree course	Agricultural and Environmental Science (SAAT)
Curriculum	
ECTS credits	3 ECTS
Compulsory attendance	No
Language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Giuliano VOX	giuliano.vox@uniba.it	AGR/10

ECTS credits details			
Basic teaching activities	2 ECTS Lectures [L]	1 ECT Lab & field cl [L&Fcs])	

Class schedule	
Period	I semester
Year	II year
Type of class	Lecture-workshops

Time management	
Hours	75 hours
In-class study hours	30 hours
Out-of-class study hours	45 hours

Academic calendar	
Class begins	28/09/2020
Class ends	21/01/2021

Syllabus	
Prerequisites/requirements	<p>Knowledge of principles for surface, volume and power calculation.</p> <p>Knowledge of principles of sustainability: soil, air and water conservation.</p>
Expected learning outcomes (according to Dublin Descriptors) (it is recommended that they are congruent with the learning outcomes contained in A4a, A4b, A4c tables of the SUA-CdS)	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> • Knowledge and understanding of structures and materials used for wastewater management • Knowledge and understanding of technological equipment used in wastewater management • Understanding of the environmental impact of wastewater <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> • Capacity to identify the most suitable structures and material used in wastewater management systems as a function of the wastewater typology • Capacity to identify the technical characteristics of the technological equipment according to the wastewater typology <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> • Ability to plan an integrated sustainable design of a wastewater management system in relation to the choice of

	<p>the structures, materials and equipment considering production efficiency</p> <ul style="list-style-type: none"> • Ability to analyze all possible environmental hazards that can be produced from all the productive activities within wastewater management systems <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> • Ability to use informatics: drawing, graphic representation, and so on <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> • Ability to continue learning by consulting books, papers and computerized catalogues. <p>Expected learning outcomes in terms of knowledge and skills are listed in Annex A of the Study Guide Course Guidelines (expressed through the European Degree Program Title</p>
Contents	<ul style="list-style-type: none"> • The issues of the wastewater management in the land. • Composition and chemical characterization of wastewater from different sources to be disposed of. • Techniques of liquid/solid separation of wastewater; mixing, storage, anaerobic and aerobic digestion; manure use for crop production. • Constructed wetlands systems for wastewater treatment. • Odor in wastewater treatments.
Course program	
Bibliography	<ul style="list-style-type: none"> • Notes of the lectures and tables distributed during the course • C.R.P.A.-Centro Ricerche Produzioni Animali (1993) “Handbook for the management and the use for crop production of animal waste”. Regione Emilia-Romagna, Italy. In Italian
Notes	
Teaching methods	
Assessment methods (indicate at least the type written, oral, other)	<p>For students attending the course there will be a partial exam after the first part of the course. This partial exam consists of an oral test on the subjects developed during the hours of lecture and exercise. The outcome of this test contributes to the evaluation of the examination of profit and is valid for one academic year. The test is passed with a vote of at least 18/30.</p> <p>The exam consists of an oral exam on the topics developed during the course. The test is passed with a vote of at least 18/30.</p> <p>For students who have stood the first part of the exam, the final vote is expressed by the average of the votes obtained in the two oral tests.</p> <p>The oral examinations are public.</p>
Evaluation criteria (Explain for each expected learning outcome what a student has to know, or is able to do, and how many levels of achievement	<p>Knowledge and understanding skills</p> <ul style="list-style-type: none"> • Knowledge and understanding skills of wastewater management • Knowledge and understanding skills of the structures and

<p>there are.</p>	<p>construction materials used for wastewater management</p> <ul style="list-style-type: none"> • Knowledge and understanding skills of technological systems for wastewater management <p>Knowledge and understanding skills applied</p> <ul style="list-style-type: none"> • ability to apply the knowledge gained in wastewater management by identifying the structures and technical characteristics of the technological equipment to minimize the environmental impact on air, soil and water <p>Autonomy of judgment</p> <ul style="list-style-type: none"> • Ability to propose sustainable solutions in wastewater management as a function of the different required applications • Ability to integrate knowledge gained in different areas <p>Communicative Skills</p> <ul style="list-style-type: none"> • Ability to communicate clearly and without ambiguity the knowledge and the ratio to specialists and non-specialists • <p>Ability to learn</p> <ul style="list-style-type: none"> • Ability to learn and deepen in a self-directed and autonomous way
<p>Further information</p>	