

AGRICULTURAL WASTE MANAGEMENT

COURSE OUTLINE

1. GENERAL			
SCHOOL	School of Agricultural Sciences		
ACADEMIC UNIT	Department of Agriculture		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0810.5.003.0	SEMESTER	1st
COURSE TITLE	Agricultural Waste Management		
INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	WEEKLY TEACHING HOURS	CREDITS	
	0	5	
Total	0	5	
COURSE TYPE general background, special background, specialised general knowledge, skills development			
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English		
OFFERED TO ERASMUS STUDENTS	Yes (in English)		
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/TGH190/		
2. LEARNING OUTCOMES			
Learning outcomes			
The course aims to present and familiarise students with modern techniques for processing the various organic residues and liquid wastes produced by agricultural and livestock production, as well as by related agro-industrial units. It also aims to highlight the optimal way in which non-agricultural wastes (urban effluent) can be utilised in agricultural production. The technologies and processes taught aim at: a) addressing the environmental impacts and problems caused by these wastes and effluents, and b) the ways in which the products of their treatment can be utilised in agriculture. After successful completion of the course, students will be able to: For composting • How to compost an organic solid residue or mixtures of residues • All the required preparations of the residues (shredding, moisture, C/N ratio, etc.) • Assessment of the progress of composting on the basis of temperature and other parameters • Laboratory and agronomic evaluation of the compost produced • The design, organisation, costing and operation of a composting unit for one or more organic residues of known quantities For anaerobic digestion • Which materials are suitable for biogas production • Assessment of the progress of the process on the basis of specific parameters (biogas, pH, VFAs, etc.) • The initial design, organisation and operation of an anaerobic digestion unit for one or more organic residues For the treatment and reuse of wastewater for irrigation • The degree of treatment required for water reuse • Evaluation of the quality characteristics of the reclaimed water in relation to its effects on crops • The possibilities of utilising reclaimed water as supplementary fertilisation of crops			
General Competences			

- Search for, analysis and synthesis of data and information, with the use of the necessary technologies
- Decision-making
- Adaptation to new situations
- Project planning and management
- Teamwork
- Promotion of free, creative and inductive thinking
- Respect for the natural environment

3. SYLLABUS

For composting

The theory is taught in the form of lectures using audiovisual teaching aids, while the laboratory is conducted through demonstration and practical application of the entire composting process and of the laboratory methods for determining the various composting parameters.

For anaerobic digestion

The theory is taught in the form of lectures using audiovisual teaching aids, while the laboratory is conducted through demonstration and practical application of the entire anaerobic digestion process and of the laboratory methods for determining the various parameters.

For the treatment and reuse of liquid wastes

The theory is taught in the form of lectures using audiovisual teaching aids, while the laboratory is conducted through demonstration and practical application of the entire treatment and reuse process and of the laboratory methods for determining its various parameters.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face lectures	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	ORGANISATION Activity Semester Workload	
TEACHING METHODS The manner and methods of teaching are described in detail.	Activity	Semester workload
	Lectures	36
	Laboratories	29
	Study	60
	Course total	125
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Written examinations 80% and assignments 20%, and for the laboratory, written examinations 60% and oral examinations 40%.	

5. ATTACHED BIBLIOGRAPHY

