

COURSE OUTLINE

GENERAL

SCHOOL	Environment and Agricultural Engineering		
ACADEMIC UNIT	Natural Resources Management and Agricultural Engineering		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	186	SEMESTER	8 th
COURSE TITLE	Waste Management		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures	4	4	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Special background		
PREREQUISITE COURSES:	Inorganic Chemistry Organic Chemistry Design and Planning of Livestock Units		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

LEARNING OUTCOMES

Learning outcomes	
<i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i>	
Consult Appendix A	
<ul style="list-style-type: none"> • Description of the level of learning outcomes for each qualifications cycle, according to the <i>Qualifications Framework of the European Higher Education Area</i> • Descriptors for Levels 6, 7 & 8 of the <i>European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> 	
<ul style="list-style-type: none"> ✓ Specialized knowledge on waste management issues ✓ Specialized competences in issues such as anaerobic and aerobic digestion, and landfill use 	
General Competences	
<i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</i>	
<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>
<i>Production of new research ideas</i>	<i>Others ...</i>

<ul style="list-style-type: none"> • Search for, analysis and synthesis of data and information, with the use of the necessary technology • Working independently • Project planning and management • Respect for the natural environment • Production of free, creative and inductive thinking 	

SYLLABUS

- Detailed study of the existing legislation concerning the treatment and disposal of the wastes produced in livestock and poultry farms. The waste management policy and practice in Greece compared to the rest European countries concerning livestock and poultry operations.
- Waste management principles in livestock and poultry farms.
- Waste management principles in food industries (e.g. dairy factory, olive oil mill).
- Control of the environment and ventilation of the animal buildings.
- Production schemes, qualitative and quantitative parameters of the wastes.
- Description and design of waste treatment installations.
- Treated effluent and solids disposal and reuse (New Code of Good Agricultural Practice).
- Potential of livestock, poultry and food industry wastes to produce biogas - biogas characteristics and properties - biogas production installation design and stable operation guidelines.
- Examples and problems exercises.

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face (lectures)	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of ICT in teaching and communication with students Printed notes edited by AUA Syllabus organization in PPT slides. Learning process support through e-class electronic Contact via email.	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i> <i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	Activity	Semester workload
	Lectures	50
	Exercises	50
	Course total	100
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	Short-answer questions Problem solving	

ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Wastewater engineering: Treatment and reuse (by Metcalf & Eddy Inc.)
- Handbook of environmental engineering calculations (by C. Lee Author, Shun Dar Lin)

- *Related academic journals:*

- Waste Management. International Journal of Integrated Waste Management, Science and Technology.
- Advances in Recycling & Waste Management.
- International journal of wastes resources