

SCHOOL	FACULTY OF ENVIRONMENT		
ACADEMIC UNIT	FOOD SCIENCE AND TECHNOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	FST912	SEMESTER	5
COURSE TITLE	VALORIZATION OF FOOD INDUSTRY BY-PRODUCTS		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercise, 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	3		
Total	3	6	
<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>	Specialised general knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes		
COURSE WEBSITE (URL)			

LEARNING OUTCOMES

Learning Outcomes

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.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

The course aims to provide knowledge on new food waste treatment technologies applied in the food industry. The utilization of food industry by-products contributes to the sustainable development through the reduction of the environmental pollution, approaching the requirement for ZERO WASTE but also the saving of raw materials.

Upon completion of the course students will:

- Understand and describe the basic principles in food industry waste treatment systems
- Classify the various types of treatment of industrial waste into physical, chemical and biological processes

- distinguish the appropriate treatment process for the different agri-food wastes
- Identify the tools and new technologies available in the systems for the treatment of industrial food waste by physico-chemical and biological processes

General Competences

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?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
 Adapting to new situations
 Decision-making
 Working independently
 Team work
 Working in an international environment
 Working in an interdisciplinary environment
 Production of new research ideas

Project planning and management
 Respect for difference and multiculturalism
 Respect for the natural environment
 Showing social, professional and ethical responsibility and sensitivity to gender issues
 Criticism and self-criticism
 Production of free, creative and inductive thinking

 Others...

- Adapting to new situations
- Decision-making
- Working independently
- Team work
- Criticism and self-criticism
- Production of free, creative and inductive thinking
- Search for, analysis and synthesis of data and information, with the use of the necessary technology

SYLLABUS

Characteristics of agricultural, livestock waste and food industry waste. Environmental effects of untreated food wastes on soil, water and air. Pollution measurement parameters. Legislation on agricultural livestock waste and food industry waste. Conventional liquid and solid waste management systems as well as the reuse of their by-products. Case studies for the recovery and utilization of by-products derived from food industry waste as well as from agro-livestock activities through the recovery of beneficial components which can be used as food , cosmetics or pharmaceutical industry.

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Use of information technology on data collection and information, in teaching and communication. Communication with students via web, e-mail, e-class and online folder sharing options etc.

<p>Use of ICT in teaching, laboratory education, communication with students</p>		
<p>TEACHING METHODS</p> <p>The manner and methods of teaching are described in detail. 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. 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</p>	<p>Activity</p>	<p>Semester workload</p>
	<p>Lectures</p>	<p>117</p>
<p>Total contact hours and training</p>	<p>117</p>	
<p>STUDENT PERFORMANCE EVALUATION</p> <p>Description of the evaluation procedure</p> <p>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</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p>	<p>Written examination on graded multiple choice difficulty plus a written project from food industry case study.</p> <p>Language Greek</p>	

ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Γκέκας Β., Μπαλά Κ., Βιομηχανία Τροφίμων και Περιβάλλον, 2005
- Κυρανάς Ε., Λειτουργικές Ιδιότητες Νερού, Πρωτεϊνών, Σακχάρων, Λιπιδίων & Φυσικών Χρωστικών, 2011.
- United Nations Environment Programme Industry and Environment (UNEP IE), (1995). Food processing and the environment. UNEP Industry and Environment 18(1).

Performance Statistics of the last 2years			
Grade (descending order)	absolute frequency	relative frequency %	sum of success rates per class
UTILIZATION OF FOOD INDUSTRY BY-PRODUCTS			
10	0	0%	0%
9	0	0%	0%
8	2	40%	40%
7	2	40%	80%
6	1	20%	100%
	5	100%	