COURSE OUTLINE

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCE		
ACADEMIC UNIT	FOOD SCIENCE AND TECNOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**FST_X11**	**SEMESTER**	10ο
COURSE TITLE	Waste Management & Utilization of By-Products Food$		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	
Seminars	1	
		5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialized general knowledge Field of Science (Waste Management & Utilization of By-Products Food) and Skills Development (case study)
PREREQUISITE COURSES:	There are no prerequisite courses
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	

2. 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 ensures the deepening and consolidation of the knowledge throughout the scope of the Waste Management & Utilization of By-Products Food. The subject matter of the course aims to understand students' theories and practices regarding the:

- use of crop residues as animal feed
- Waste management characteristics
- Community legislation on the production and disposal of by-products and waste of an agricultural business.

Upon successful completion of the course the student will be able to:

• Have knowledge that involves a critical understanding of theories and principles regarding the types of by-products of agricultural industries and the most appropriate ways of their utilization, the modern methods of waste management of agricultural industries and livestock farms.

• Collect and interpret relevant data, typically within the cognitive field of Agricultural Products Byproduct & Waste Management, to form judgments that include reflection on relevant social, scientific or ethical issues related to agricultural production.

• Have developed those skills to acquire knowledge that they need to continue in further studies with a high degree of autonomy.

• Communicate information, ideas, problems and solutions to both qualified and non-specialized audiences as well as to collaborate with their fellow students to organize and present a management plan for By-products and Waste of Agricultural Enterprises.

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	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Others…*
	…….

By the end of this course the student will, furthermore, have developed the following skills (general abilities):

Search, analyze and synthesize data and information, using the necessary technologies

Exercise of criticism and self-criticism

Teamwork

3. SYLLABUS

- Utilization of crop residues as feed.
- Manufacture and utilization of by-products of agricultural plants of plant origin and animal origin as animal feed.
- Wastes from agricultural industries. Liquid and solid waste from livestock farms.
- Waste characteristics and waste treatment and management methods.
- Community legislation on the production and disposal of by-products and waste from an agricultural enterprise

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. Communication with students: through e-mail, department's website and platform e-class. The lectures content of the course for each chapter are uploaded on the internet, in the form of a series of .pdf files, where students can freely download them from the platform e-class.upatras.gr

TEACHING METHODS

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

Activity	***Semester workload***
Lectures (3 hours per week x 13 weeks)	39
Seminars (1 hour per week x13)	13
Developing a project on the transition from conventional to organic farming	25
Final examination (3 hours)	3
Non-guided study	45
Total number of hours for the Course (25 hours of work-load per ECTS credit)	***125***

STUDENT PERFORMANCE EVALUATION

Description of the evaluation procedure

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

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

Written examination after the end of the semester (100%) including:

- Multiple-choice questions
- Benchmarking theory elements

I. Written final exam (70%) comprising:
- Short answer questions or multiple-choice questions
- Solving problems related to Waste Management & Utilization of By-Products Food
- Comparative evaluation of the theory

II. Presentation of teamwork (30%)
- Delivering written works and public presentation by Working Groups

Grading scale: 1 to 10.
Minimum passing grade: 5.
Examination time: 3 hours.

5. ATTACHED BIBLIOGRAPHY

Gkekas Vasilis, Balta-Bruma Kalliopi, 2005. Food Industry & Environment, EMBRYO.