FOOD PACKAGING

COURSE OUTLINE

GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
DEPARTMENT	FOOD SCIENCE AND NUTRITION		
EDUCATION LEVEL	*Undergraduate*		
COURSE CODE	**ΜΚ913**	**ΕΞΑΜΗΝΟ ΣΠΟΥΔΩΝ**	9
COURSE TITLE	FOOD PACKAGING RESPONSIBLE: I. Giovanoudis		

SELF-ENDED TEACHING ACTIVITIES *in case the credits are awarded in separate parts of the course e.g. Lectures, Laboratory Exercises, etc. If the credits are awarded uniquely for the entire course, enter the weekly teaching hours and total credits*	**WEEKLY TEACHING HOURS**	**CREDIT UNITS (ECTS)**
Lectures	3	5
Laboratory / Application Exercises	2	

COURSE TYPE ***Background, General Knowledge, Scientific Area, Development Skills***	Scientific Area of Food Packaging
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	

LEARNING OUTCOMES

Learning Outcomes

Upon successful completion of the course, the student will have acquired the following knowledge in Food and Beverage Packaging. The course includes an initial analysis of trends in food processing and packaging. Then conceptual elements for packaging are mentioned and different types of materials are described: glass, plastic, paper, metal and wood. For each material, the design and method of preparation, its properties, applications in food, future trends and environmental and legal issues in their use are mentioned.
The aim of the course is to understand and learn the scientific and technical concepts related to food packaging, specifically the function of the packaging, the materials, their production and their applications.
Packaging innovations and special topics such as smart and active packaging, biodegradable materials and packaging in modified atmosphere are developed within the framework of the theory of the course and of the laboratory.

General Skills

- Data search, analysis and synthesis
- Promotion of critical thinking
- Promotion of teamwork
- Promotion of independent work
- Work in an interdisciplinary environment
- Generation of new research ideas
- Acquiring the appropriate theoretical background to enable further education

COURSE CONTENT

1st Week. Purpose and objectives of the course. General course description

2nd. Role of packaging. Trends in food processing. Usage examples packaging in various foods I
3rd. Role of packaging. Trends in food processing. Usage examples packaging in various foods II
4th. Glass packaging
5th. Metal packaging
6th. Plastic packaging
7th. Permeability and mechanical properties of polymers - Solving exercises
8th. Paper packing
9th. Shelf life of packaged foods
10th. Modified and controlled atmospheres, Active packaging, Smart packaging, Biodegradable packaging materials
11th. Environmental/legal issues. Recycling, Methods of disposal. Saving energy. Future trends
12th. Material review. Case studies.
13th. Replacements

Laboratory exercises
#1: Checks in Glass packaging
#2: Checks in Metal packaging
#3: Checks in Plastic packaging
#4: Case studies of packaging design.

TEACHING and LEARNING METHODS - EVALUATION

TEACHING METHOD	Face-to-face lectures in a classroom and Laboratory / Application Exercises in suitable Laboratory/ Classroom.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	**Internet, e-mail, Powerpoint**
TEACHING ORGANISATION	

Activity	*Semester's Workload*
Lectures	39
Individual study and preparation for lectures	15
Workshop-practical exercises	26
Individual study and preparation for the workshop-practical exercises	15
Educational visits	7
Preparation for exams	20
Final exam	3
Total (25 workload hours per Credit unit)	***125***

STUDENT EVALUATION	The evaluation language is Greek. The final grade of the course is formed by 50% from the theoretical part and 50% from the laboratory courses. The evaluation of the students is done optionally with progress and a final written exam, which will include multiple choice, or true-false, or short answer, or judgment, or presentation of projects or a combination of the above.

RECOMMENDED BIBLIOGRAPHY

Suggested Bibliography:

Book [77106804]: Food Packaging, Papadakis Spyridon E.
Food processing and packaging technologies, Arvanitogiannis Ioannis, Stratakos Alexandros, UNIVERSITY STUDIO PRESS
Gordon L. Robertson. 2012. Food Packaging: Principles and Practice. CRC Press (3rd ed.). ISBN

9781439862414
Book [68403752]: Food processing 1, Lazos E., Lazou A.
Book [68389027]: Food processing 2, Lazos E., Lazou A.
Book [68393954]: Food processing & preservation, Bloukas G.

Related scientific journals:

Journal of Packaging Technology and Research
Food Packaging and Shelf Life
Packaging Technology & Science
Journal of Food Process Engineering
Food Engineering Reviews