

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	AGRICULTURAL SCIENCES		
<b>ACADEMIC UNIT</b>	FOOD SCIENCE AND TECHNOLOGY		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	<b>FST_702</b>	<b>SEMESTER OF STUDIES</b>	SEVENTH
<b>COURSE TITLE</b>	FOOD PACKAGING		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <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>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
Lectures and seminars	4	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Obligatory specialised general knowledge		
<b>PREREQUISITE COURSES:</b>	Typically, there are not prerequisite course.		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek / English		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>COURSE WEBSITE (URL)</b>	<a href="https://eclass.upatras.gr/">https://eclass.upatras.gr/</a>		

### 2. LEARNING OUTCOMES

<p><b>Learning outcomes</b></p> <p><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></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>								
<p>After successfully completing the course, students will know the modern trends in food packaging as well as the design and manufacturing method, its properties, its applications to food, future trends and environmental and legal issues in its use. Special issues of packaging such as intelligent, intelligent materials, biodegradable, active, modified, in vacuum, etc.</p> <p>Student will be able to understand the physicochemical aspects of the types of packaging material used in the food industry; Food/packaging material interactions</p>								
<p><b>General Competences</b></p> <p><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></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></td> <td style="width: 50%; border: none;"><i>Project planning and management</i></td> </tr> <tr> <td style="border: none;"><i>Adapting to new situations</i></td> <td style="border: none;"><i>Respect for difference and multiculturalism</i></td> </tr> <tr> <td style="border: none;"><i>Decision-making</i></td> <td style="border: none;"><i>Respect for the natural environment</i></td> </tr> <tr> <td style="border: none;"><i>Working independently</i></td> <td style="border: none;"><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></td> </tr> </table>	<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>
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<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>Working in an international environment</i> <i>Working in an interdisciplinary environment</i> <i>Production of new research ideas</i>	<i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> ..... <i>Others...</i> .....
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Generally, by the end of this course the student will have developed the following general abilities (from the list above):

- Autonomous (Independent) work
- Adapting to new situations
- Promotion of free, creative and inductive thinking
- Respect for the food safety
- Project planning and management

### 3. SYLLABUS

Introduction: Purpose and objectives of the course - Course description. Role of packaging. Trends in food processing. Examples of packaging use in various foods, Plastic packaging I Conceptual terms. Plastic Packaging Types, Plastic Packaging II Ways of manufacturing plastic packaging. Properties of plastic materials, Plastic packaging III Mass transfer. Plastic permeability, Paper packaging I. Conceptual terms. Paper manufacture, Paper packaging II. Paper packaging and applications, Paper packaging III Multilayer packaging. Canned paper, Glass packaging. Conceptual terms. Preparation of glass packaging. Glass packaging applications, Other types of packaging. The role of metal packaging in sterilization. Aseptic packaging and alternative articles used, Environmental / legal issues. Recycling, ways of disposal. Energy saving. Future Trends, Case Studies Case Examples, Lesson Review. Assessment of utility of different types of packaging

### 4. TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Lectures face to face.	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. The lectures content of the course for each chapter are uploaded on the internet, in the form of pdf files, where from the students can freely download them using a password which is provided to them at the beginning of the studies.	
<b>TEACHING METHODS</b> <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>	<b>Activity</b>	<b>Semester workload</b>
	Lectures (3 conduct hours per week x 13 weeks)	39
	Seminars (1 conduct hour per week x 13 weeks)	13
	work on an assignment	16
	Final examination (3 conduct hours)	3

	Hours for private study of the student	54	
	<b>Total number of hours for the Course (25 hours of work-load per ECTS credit)</b>	<b>125 hours (total student work-load)</b>	
<p align="center"><b>STUDENT PERFORMANCE EVALUATION</b></p> <p><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></p>	<ol style="list-style-type: none"> <li>1. Written examination after the end of the semester. The mark constitutes the 75% of the final grade (<math>G_{75\%}</math>).</li> <li>2. Assignment provided during the term. The mean mark constitutes the other 25% of the final grade (<math>G_{25\%}</math>).</li> </ol> <p>The final grade for the course is calculated by the final grade in the assignment (25%) and the grade of the final written examination (75%).</p>		

## 5. ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- **Papadakis S. 2010. Food Packaging Tziolas Publishing ISBN: 9789604182268**
- **Bloukas J., 2004. Food Packaging Stamoulis Publishing ISBN:9603515086**
- **Gordon L. Robertson. 2012. Food Packaging: Principles and Practice. CRC Press (3rd ed.). ISBN 9781439862414**