

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	AGRICULTURAL SCIENCES		
<b>DEPARTMENT</b>	FOOD SCIENCE AND TECHNOLOGY		
<b>LEVEL OF COURSE</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	<b>FST_500</b>	<b>SEMESTER OF STUDIES</b>	5 <sup>th</sup>
<b>COURSE TITLE</b>	FOOD SAFETY		
<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>ECTS CREDITS</b>	
Lectures	3		
Lab. Exercises	2		
<b>Total</b>	<b>5</b>	<b>5</b>	
<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>	Specialized general knowledge		
<b>PREREQUISITE COURSES:</b>	Typically, there are not any prerequisite courses		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	No		
<b>COURSE WEBPAGE (URL)</b>	<a href="https://eclass.upatras.gr/modules/auth/opencourses.php?fc=152">https://eclass.upatras.gr/modules/auth/opencourses.php?fc=152</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><b>The course constitutes the basic introduction to food hygiene and safety</b> where: (i) the concepts of food quality, hygiene and safety are clarified and the correlation between them is explored, (ii) the importance of microbiological control in food to ensure its hygiene is highlighted, (iii) the biological, chemical and physical hazards found in food, as well as possible indicators of food hygiene are distinguished, (iv) microbiological criteria for the safety of food during manufacturing and processing based on the European Community legislative framework are applied, and (v) an introduction to the concept of Hazard Analysis and Critical Control Points (HACCP) in food processes and the principles of the HACCP system, along with case studies and practical applications of the HACCP system in the food industry and in food production/manufacturing processes are applied.</p>
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**The course refers also to the behavior of the end user (consumer) of food** in terms of perception, awareness and training in good hygiene and food handling practices in the home environment (kitchen). Common inappropriate practices and consumer behavior regarding food hygiene and safety in the home environment are described.

**The aim of the course** is for the students to understand the basic principles of food hygiene and safety in order to establish the triad safety, quality and acceptability (SQA) in food. In addition, it seeks to establish a food safety culture in food business operators and the food industry, as well as to analyze the way of thinking and study the behavior of the food consumer, through dealing with situations that may jeopardize food safety and consequently human health itself.

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

- Understand the basic principles of food microbiology
- Comprehend the relationship and linkage between quality, hygiene and safety in foods, assessing also the importance of SQA in foods
- Distinguish between microbiological safety and microbiological quality of food and ensuring public health through microbiological food control.
- Identify hazards in food (i.e., biological, chemical, physical)
- Interpret the legal framework governing food safety (microbiological criteria)
- Apply the principles of HACCP to food production processes
- Interpret household food consumer behavior and evaluate the effect on food safety.
- Suggest means of dealing with inappropriate hygiene practices and consumer behavior during domestic handling and processing of food.

#### **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*

*Promotion of free, creative and inductive thinking*

By the end of this course, the student will have acquired the following general competencies (from the list above):

- Adapting to new situations
- Decision-making
- Production of new research ideas
- Project planning and management
- Promotion of free, creative and inductive thinking

### **3.SYLLABUS**

#### *- Lectures*

Introduction to food hygiene and safety – Basic principles of food hygiene, Food safety and quality, Assurance of food hygiene and microbiological food control, Hazards and food hygiene indicators, Food safety during manufacturing and processing, Introduction to Hazard Analysis Critical Control Points (HACCP), HACCP plan development, Principles of HACCP, Implementation of HACCP in the food industry and in food production/manufacturing processes, Food safety culture, Food consumer behavior, Common inappropriate practices and consumer behavior regarding food hygiene and safety in the kitchen environment, Training of the food consumer.

#### *-Laboratory exercises*

Introductory food microbiology – Basic laboratory practices and techniques followed in the

microbiological laboratory, Microbiological food control, Standard methods for the detection of major foodborne pathogens, Microbiological criteria for foodstuffs, Microbiological control of fresh minced meat, Control for the presence of antibiotics in animal-originated foods (meat, milk).

#### 4. TEACHING AND LEARNING METHODS - EVALUATION

<p><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	Face-to-face	
<p><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	<p>Use of Information and Communication Technologies (ICTs) (e.g., PowerPoint) in teaching. Communication with students: through e-mail, department's website and e-class platform. 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 (<a href="https://eclass.upatras.gr/">https://eclass.upatras.gr/</a>).</p>	
<p><b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail.</i></p> <p><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></p> <p><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></p>	<p><b>Activities</b></p>	<p><b>Work Load per semester</b></p>
	<p>Lectures (3 hours per week x 13 weeks)</p>	<p>39</p>
	<p>Lab. exercises (2 hours per week x 13 weeks)</p>	<p>26</p>
	<p>Final examination (3 hours)</p>	<p>3</p>
	<p>Non-guided study</p>	<p>57</p>
<p><b>Total number of hours for the Course (25 hours of work-load per ECTS credit)</b></p>	<p><b>125</b></p>	
<p><b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure</i></p> <p><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></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Students are evaluated through a written final exam (100%), which includes a total of 50 and 20 questions for lectures and laboratory exercises, respectively. The questions include the following:</p> <ul style="list-style-type: none"> <li>• Multiple-choice questions (60% of total questions)</li> <li>• True or False questions (35% of total questions)</li> <li>• Short answer questions (5% of total questions)</li> </ul> <p><u>Grading scale:</u> 0.5 to 10.0 <u>Minimum passing grade:</u> 5.0 <u>Examination time:</u> 3 hours</p> <p>The final grade for the course is the average of grades in the final written examination for lectures and laboratory exercises, provided that the minimum passing grade has been achieved (i.e., ≥ 5.0) for each part of the course.</p> <p>All performance evaluation criteria are announced in the introductory lecture of the course, which is posted and easily accessible by students on the online page of the course at the</p>	

	e-class platform.
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## 5. ATTACHED BIBLIOGRAPHY

- *Suggested bibliography:*

1. Surak, J. G., & Wilson, S. (2014). The certified HACCP auditor handbook. (3rd edn.) Milwaukee, Wisconsin: ASQ Quality Press.

- *Suggested scientific journals:*

1. Food Control
2. Journal of Food Protection
3. Journal of Food Safety