

## MODULE LAYOUT

### 1. GENERAL

<b>SCHOOL</b>	<b>FOOD AND NUTRITIONAL SCIENCES</b>		
<b>DEPARTMENT</b>	FOOD SCIENCE AND HUMAN NUTRITION		
<b>STUDY LEVEL</b>	<i>Undergraduate</i>		
<b>MODULE CODE</b>	<b>3403</b>	<b>SEMESTER</b>	9 <sup>th</sup>
<b>MODULE TITLE</b>	SPECIAL TOPICS IN FOOD CHEMISTRY		
<b>INDEPENDENT TEACHING ACTIVITIES</b>		<b>WEEKLY TEACHING HOURS</b>	<b>ECTS</b>
<b>Theory:</b> Lectures		2	5
<b>Laboratory:</b> practicals		3	
<b>COURSE TYPE</b>	Scientific area, Skills Development		
<b>PREREQUISITES</b>			
<b>LANGUAGE</b>	Greek		
<b>IS THE COURSE OFFERED for ERASMUS STUDENTS?</b>	No		
<b>COURSE WEB PAGE</b>	<a href="https://mediasrv.aua.gr/eclass/courses/ETDA188/">https://mediasrv.aua.gr/eclass/courses/ETDA188/</a>		

### 2. LEARNING OUTCOMES

<b>Learning Outcomes</b>
<p>This module aims to introduce students to special topics in Food Chemistry. In particular:</p> <p>a) to provide specialized knowledge in food chemistry</p> <p>b) to study the chemical components of selected food categories with emphasis on the most important for the Greek economy.</p> <p>(c) to complete knowledge of the physical and chemical interactions of ingredients and their effect on the organoleptic characteristics of food</p> <p>g) to develop skills for bibliographic information retrieval</p>
<b>General Competenses</b>
<ul style="list-style-type: none"> <li>- Retrieve, analyze and synthesize data and information, with the use of necessary technologies</li> <li>- Adapt to new situations</li> <li>- Future research</li> <li>- Make decisions</li> <li>- Work autonomously</li> <li>- Work in teams</li> <li>- Respect natural environment</li> <li>- Be critical and self-critical</li> </ul>

### 3. MODULE CONTENT

1. Physical and chemical interactions of food ingredients and their effect on color, texture, aroma and taste of food.
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2. Physiology and chemistry of edible muscle tissues. Muscle tissue proteins. Post-mortem changes of proteins - effect on meat quality. Chemical changes during preservation. Chemical composition of processed meats, eggs, seafoods.
3. Chemical composition of edible plant tissues. Chemical changes that affect their quality. (Cereals & Legumes, Fruits & Vegetables)
4. Chemical composition of cereal products (flour, bread)
5. Coffee, tea, cocoa, honey: chemical composition and changes during the processing and production stages
6. Olive oil processing-seed oils-margarines : composition and properties.
7. Chemical composition of olive oil - phenolic and volatile compounds. Olive oil alterations (hydrolytic and oxidative rancidity). Chemical analysis - quality and authenticity criteria.
8. Leading edge topics in Food Chemistry

#### 4. TEACHING and LEARNING METHODS - Evaluation

<b>TEACHING METHOD</b>	Teaching in the auditorium using supervisory teaching aids (ppt, Video, slides), bibliographic work, lab exercises	
<b>USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES</b>	Power point presentations on lectures, use of information data in the lab. Communication with students via open eclass platform and e-mail.	
<b>TEACHING ORGANISATION</b>	<b>Activity</b>	<b>Φόρτος Εργασίας Εξαμήνου</b>
	Lectures	(2*13) 26 hours
	Laboratory work	(3*13) 39 hours
	Individual study	(2*13) 26 hours
	Group and/or individual works	26 hours
	Educational visits	5 hours
	Final exam	3 hours
	<b>Total contact hours and training</b>	<b>125 hours</b>
<b>STUDENTS EVALUATION</b>	<p>Written exams in both theoretical and practical parts which may include: Multiple choice test, Questions of brief answer, Questions to develop a topic, Judgment questions.</p> <p>In particular for the practical part students must have read the laboratory exercise and be ready to answer questions. Upon completion of the exercise, the student fills in the required data in the laboratory diary that he keeps and is graded for the result of the analysis and the conclusions he draws. The mean value of oral examination and the written exercises delivered by the students gives 30% of the practical part final grade.</p> <p>Marking Scale: 0-10. Minimum Passing Mark: 5.</p>	

#### 5. BIBLIOGRAPHY

**-Proposed Literature:**

- Food Chemistry, Belitz, H.-D., Grosch, W., Schieberle, P., Springer
- Fennema's Food Chemistry, S. Damodaran, K.L. Parkin, O.R. Fennema, 4<sup>th</sup> Ed., CRC Press
- Instructor's Manual for Principles of Food Chemistry, John M. SeMan, Aspen Publishers
- Food Analysis, S.S. Nielsen, 4<sup>th</sup> Ed., Springer

- Olive Oil – Chemistry and Technology, D. Boskou, 2<sup>nd</sup> Ed., AOCS Press
- Handbook of Olive Oil-Analysis and Properties, R. Aparicio, J. Harwood, 2<sup>nd</sup> Ed., Springer

***-Related Scientific Journals:***

- Journal of Agricultural and Food Chemistry,
- Food Chemistry,
- Journal of Food Science and Technology,
- Agricultural and Environmental Chemistry,
- International Journal of Agricultural and Food Research (IJAFR),
- Journal of Food Processing & Technology,
- Journal of food composition & analysis,
- Journal of the American Oil's Chemist Society