**MODULE LAYOUT**

1. **GENERAL**

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| **SCHOOL** | FOOD AND NUTRITIONAL SCIENCES  |
| **DEPARTMENT** | FOOD SCIENCE AND HUMAN NUTRITION |
| **STUDY LEVEL** | *Undergraduate*  |
| **MODULE CODE** | **3390** | **SEMESTER** | 4th  |
| **MODULE TITLE** | FOOD CHEMISTRY |
| **INDEPENDENT TEACHING ACTIVITIES** | **WEEKLY TEACHING HOURS** | **ECTS** |
| Lectures and Practicals | 5 (3+2) | 5 |
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| **COURSE TYPE** | Scientific AreaSkills development in laboratory |
| **PREREQUISITES** |  |
| **LANGUAGE** | Greek |
| **IS THE COURSE OFFERED for ERASMUS STUDENTS?** | Yes (in English) |
| **COURSE WEB PAGE** | <https://mediasrv.aua.gr/eclass/courses/ETDA130/> <https://mediasrv.aua.gr/eclass/courses/ETDA142/> |

1. **LEARNING OUTCOMES**

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| **Learning Outcomes** |
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| This module aims to provide students with knowledge of important chemical components of foods, and their impact on food quality during processing and storage.Students should be able to:* State the structures and discuss the properties of proteins, lipids, carbohydrates, vitamins.Discuss the effects of processing and storage on these components during processing and storage.
* Discuss the importance of non-enzymatic browning on food production and preservation.
* Describe selected permitted food additives and discuss their impact on food quality and/or safety.
* Discuss the formation of flavor components in food
* Describe the undesirable food constituents (toxicants)
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| **General Competenses** |
| * Make decisions
* Work autonomously
* Future research
* Work in teams
* Be critical and self-critical
* Advance free, creative and causative thinking
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1. **MODULE CONTENT**

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| 1. Water and Ice
2. Carbohydrates
3. Lipids
4. Amino acids, peptides, enzymes and Proteins
5. Vitamins
6. Minerals
7. Food Additives
8. Colorants
9. Flavors
10. Toxicants
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1. **TEACHING and LEARNING METHODS - Evaluation**

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| **TEACHING METHOD** | Physical presence (teaching in the auditorium and laboratory, bibliographic work) |
| **USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES** | Power point presentationsTeaching support through access to the e-class platform and MS TeamsStudent contact via e-mail |
| **TEACHING ORGANISATION** |

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| ***Activity*** | ***Φόρτος Εργασίας Εξαμήνου*** |
| Lectures | 39 (3\*13) hours |
| Laboratory practicals | 26 (2\*13) hours |
| Writing assignments | 25 hours |
| Study and analysis of scientific literature | 6 hours |
| Weekly study hours | 26 hours |
| Final exam | 3 hours |
| ***Total of Course (25 work hours per credit unit)*** | ***125*** |

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| **STUDENTS EVALUATION** | **Ι. Theory** Final written exam, which may include multiple choice questions, short-answer questions, Questions to develop a topic, Judgment questions and Exercise solving.Marking Scale: 0-10.Minimum Passing Mark: 5. **ΙΙ. Laboratory**The examination in the laboratory part of the course is formed by:1. Oral examination during the practicals to determine the degree of preparation (5%)2. Written individual reports (25%)3. Final written exam in the laboratory part of the course which includes short answer questions and problem solving (70%)Marking Scale: 0-10.Minimum Passing Mark: 5. The final course’s mark is the average of the marks on Theory and Practicals |

1. **BIBILIOGRAPHY**

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| ***-*Proposed Literature:*** Food Chemistry, Belitz, H.-D., Grosch, W., Schieberle, P., Springer
* Food Chemistry, by O. Fennema , CRC Press
* Ιnstructor’s Manual for Principles of Food Chemistry, John M. deMan Aspen Publishers

-**Related Scientific Journals:*** Food Chemistry
* Journal of Agricultural and Food Chemistry
* Journal of food composition & analysis
* Journal of the American Oil’s Chemist Society
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