**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 Area  Skills 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) | |
| **General Competenses** |
| * Make decisions * Work autonomously * Future research * Work in teams * Be critical and self-critical * Advance free, creative and causative thinking | |

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 |

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 presentations  Teaching support through access to the e-class platform and MS Teams  Student contact via e-mail |
| **TEACHING ORGANISATION** | |  |  | | --- | --- | | ***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*** | |
| **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 |