



**FOOD TOXICOLOGY  
COURSE OUTLINE**

**GENERAL**

|  |   |                              |                 |
|--|---|------------------------------|-----------------|
| <b>SCHOOL</b>  | AGRICULTURAL SCIENCES                                   |                              |                 |
| <b>DEPARTMENT</b>  | FOOD SCIENCE AND NUTRITION                              |                              |                 |
| <b>COURSE LEVEL</b>  | <i>Undergraduate</i>                                    |                              |                 |
| <b>COURSE CODE</b>   | MK717   | <b>SEMESTER</b>              | 7 <sup>th</sup> |
| <b>COURSE TITLE</b>  | FOOD TOXICOLOGY<br>RESPONSIBLE: I. GIAVASIS             |                              |                 |
| <b>INDEPENDENT TEACHING ACTIVITIES</b>   |   | <b>WEEKLY TEACHING HOURS</b> | <b>ECTS</b>     |
|  | <b>Lectures</b>   | 3                            | 6               |
|  | <b>Lab Lectures-exercises</b>                           | 3                            |                 |
| <b>COURSE TYPE</b><br><i>Background, General Knowledge, Scientific Area, Skill Development</i> | <i>Scientific Area</i>                                  |                              |                 |
| <b>PREREQUISITES:</b>  |   |                              |                 |
| <b>LANGUAGE OF TEACHING AND EXAMINATIONS:</b>  | GREEK   |                              |                 |
| <b>THE COURSE IS OFFERED TO ERASMUS STUDENTS</b>   | YES   |                              |                 |
| <b>URL</b>   | <a href="https://food.uth.gr/">https://food.uth.gr/</a> |                              |                 |

**TEACHING RESULTS**

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| <b>Teaching Results</b>   |
| Upon successful completion of the course, the student will be able to: <ul style="list-style-type: none"> <li>• To understand the basic concepts of toxicology in order to understand its nature problem arising on a case-by-case basis</li> <li>• Understand the toxicological hazards that may occur in various foods based on their nature and production and storage conditions</li> <li>• To perform estimation calculations and to evaluate the risk from exposure to toxic agents</li> <li>• Understand the parameters that affect the results of analytical techniques and assess the reliability of a method</li> <li>• Be able to look up legislation relating to maximum acceptable levels residues of a toxic agent and be able to evaluate the results</li> </ul> |
| <b>General Skills</b>   |
| <ol style="list-style-type: none"> <li>1. Search, analysis and synthesis of data and information, using and necessary technologies.</li> <li>2. Adaptation to new situations.</li> <li>3. Decision making.</li> <li>4. Autonomous work.</li> <li>5. Group work.</li> <li>6. Project planning and management.</li> <li>7. Exercise criticism and self-criticism</li> <li>8. Promotion of free, creative and inductive thinking</li> </ol>  |

**CONTENT**



### LECTURES

#### 1st Week

Introduction to Food Toxicology and Foodborne Illness.

#### 2nd Week

Assessment and Risk Management of Toxic Substances.

#### 3rd Week

Absorption, Distribution, Storage and Excretion of Toxic Substances.

#### 4th Week

Bioconversion of Toxic Substances.

#### 5th Week

Detection and Determination of Toxic Substances in Food.

#### 6th Week

Endogenous Food Toxins of Animal Origin.

#### 7th Week

Toxic Phytochemicals and Pesticides

#### 8th Week

Industrial pollutants and heavy metals.

#### 9th Week

Food Additives and toxic compounds formed during Food Processing.

#### 10th Week

Pathogenic microorganisms and foodborne diseases. Natural toxins of living organisms

#### 11th Week

Mechanisms of response/prevention against food pathogenic microbes.

#### 12th Week

Nutritional Diseases.

#### 13<sup>th</sup> Week

Recap of key concepts

### LAB EXERCISES

In the form of tutorials

### TEACHING AND LEARNING METHODS - EVALUATION

|  |  |                 |  |
|--|--|-----------------|--|
| <b>TEACHING METHOD.</b>                                  | Face to face lectures in the auditorium/classroom and face to face laboratory exercises in an appropriate laboratory.  |                 |  |
| <b>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</b> | <ul style="list-style-type: none"> <li>• Use of I.C.T. in Teaching, in Laboratory Education, in Communication with the students</li> <li>• Use of ICT in Teaching</li> <li>• Use of ICT in Laboratory Education (Usage software for statistical control of the quality of food)</li> <li>• Use of ICT in Communication with students</li> </ul> <p>The course material (theory and exercises) is posted in the e-class of the DFSN of UT. Communication with the students is done through announcements on the e- class. From this platform, students can communicate by email with the teacher.</p> |                 |  |
| <b>TEACHING STRUCTURE</b>                                | <b>Activity Semester</b>   | <b>Workload</b> |  |
|  | Lectures   | 39              |  |
|  | Lab exercises  | 36              |  |
|  | Reporting from lab exercises   | 36              |  |
|  | Preparation for exams  | 39              |  |



|                               |   |            |
|-------------------------------|---|------------|
|                               | <b>Course Total:</b><br><b>(25 hours of workload per credit unit)</b>   | <b>150</b> |
| <b>EVALUATION OF STUDENTS</b> | 1. Written exam (70 %):<br>- Multiple choice questions<br>- Short development questions<br>- Questions of crisis and development<br>2. Laboratory exercises (20%):<br>- Participation and performance during the laboratory exercise<br>- Written report of laboratory results<br>Therefore: the total grade is obtained as a sum of above two individual evaluations |            |

#### **BIBLIOGRAPHY**

*-Suggested Bibliography:*

- Food Toxicology: 1st Edition/2015. Yaginis Konstantinos, Karantonis Charalambos, Theoharis Stamatios. Publications Ziti Pelagia & Co. I.K.E. – ISBN: 978-960-456-453-8 2.
- Basic Toxicology: 1st Edition /2013. C. KLAASSEN, J. WATKINS. PARISIANO EDITIONS ANONYMOUS PUBLISHING AND IMPORTING TRADE COMPANY OF SCIENTIFIC BOOKS. ISBN: 978-960-394-932-9.