

SCHOOL	ENVIRONMENT		
ACADEMIC UNIT	FOOD SCIENCE & TECHNOLOGY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	FST601	SEMESTER	6
COURSE TITLE	INSTRUMENTAL FOOD ANALYSIS		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercise, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures	2		
Laboratory practice	2		
Total	4	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>General background, special background, specialised general knowledge, skills development</i>	Specialised general knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes, in Greek		
COURSE WEBSITE (URL)			

LEARNING OUTCOMES

Learning Outcomes

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.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

The course of **Instrumental Food Analysis** falls under the issues of organology and applications of instruments to perform chemical analysis of food.

The aim of Instrumental Food Analysis course is to educate students to identify the different methods of instrumental analysis of food, know the organology of instruments, select the appropriate method as well as to evaluation of the results obtained.

Upon successful completion of the course students will have knowledge to:

- Apply the methodologies for the proper pretreatment of samples prior to analysis.

- Select the most suitable technique for the food analysis to be performed.
- Use specialized equipment
- Perform instrumental analysis
- Collect and assess data and subsequently evaluate the results

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
 Production of free, creative and inductive thinking

 Others...

1. Working independently
2. Team work
3. Decision-making
4. Solving problems

SYLLABUS

Introduction to instrumental Food Analysis. Classification of analyses. Statistical analysis of data
 Sample preparation. Extraction methods.
 Electroanalytical techniques. Potentiometry.
 Introduction to chromatography
 Gas chromatography
 Liquid chromatography (HPLC, paper chromatography, TLC).
 Introduction to Spectroscopy
 Absorption Spectroscopy (Ultraviolet/Visible)
 Fluorescence spectrometry
 Atomic Absorption Spectroscopy
 Infrared Spectroscopy, Raman
 Nuclear Magnetic Resonance
 Mass Spectrometry and Hyphenated Instruments
 Practice in solving problems

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	In teaching class	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Power point presentation, Whiteboard writing, solving problems Laboratory practice	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i>	Activity	Semester workload
	Lectures	78

<p>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.</p> <p>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</p>	Laboratory practice	26	
	Total contact hours and training	104	
<p>STUDENT PERFORMANCE EVALUATION</p> <p>Description of the evaluation procedure</p> <p>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</p> <p>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</p>	<p>Final written examination in theory and in laboratory that includes:</p> <ul style="list-style-type: none"> -multiple choice questions -short answer questions -judgment questions -problem solving 		

5. ATTACHED BIBLIOGRAPHY

8. Principles of Instrumental Analysis. D. A. Skoog, F. James Holler, T. A. Nieman

Performance Statistics of the last 2years			
Grade (descending order)	absolute frequency	relative frequency %	sum of success rates per class
INSTRUMENTAL FOOD ANALYSIS			
10	1	1%	1%
9	3	3%	4%
8	6	6%	9%
7	32	30%	40%
6	64	60%	100%
	106	100%	