FOOD CHEMISTRY AND ANALYSIS

COURSE OUTLINE

Responsible: Aspasia Spyridaki

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΥΔ3008	**SEMESTER**	1st
COURSE TITLE	Food Chemistry and Analysis		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	6	6
Total	**6**	**6**

COURSE TYPE general background, special background, specialised general knowledge, skills development	
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Both Winter and Spring Semesters
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/NDS269/

2. LEARNING OUTCOMES

Learning outcomes

Upon successful completion of the course, students will be able to:

- demonstrate advanced knowledge and understanding of the properties of the main food components;
- explain how the properties of food components affect food deterioration, preservation and changes occurring during processing;
- describe, interpret and evaluate analytical methods used for the determination of food components and interpret the results obtained;
- perform calculations related to food composition and evaluate the nutritional information provided on food labels;
- work independently and as part of a team, following established laboratory protocols.

General Competences

- Searching, analysing and synthesising data and information using appropriate technologies
- Generating new ideas
- Independent work
- Teamwork

3. SYLLABUS

Nutrients. Macronutrients and micronutrients in foods. Energy value of foods. Digestion and absorption of nutrients. Water in foods: water binding and water activity. Water activity and food deterioration. Vitamins and minerals in foods. Chelating agents.

Carbohydrates: sugars, reducing sugars, monosaccharide derivatives, glycosides, oligosaccharides, homopolysaccharides, starch properties, resistant starch, heteropolysaccharides, dietary fibre, hydrocolloids, browning reactions and sweeteners.

Dietary proteins: essential and non-essential amino acids, limiting amino acids, biological value of proteins, protein complementation and the effects of heat processing on protein quality.

Edible fats and oils: thermal stability of oils, hydrolytic and oxidative rancidity, factors affecting the rate of oxidation, natural and synthetic antioxidants, analysis of oils, assessment of oxidative status, extraction and processing of oils, olive oil, seed oils, fish oils and margarines.

Milk and dairy products, meat, fish, eggs, fruits and vegetables, cereals and legumes.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face teaching, including lectures, practical exercises and laboratory sessions.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	

5. ATTACHED BIBLIOGRAPHY

Belitz, H.-D., Grosch, W., and Schieberle, P. *Food Chemistry*. Springer.