

COURSE LAYOUT

1. GENERAL

SCHOOL	School of Food and Nutritional Sciences		
DEPARTMENT	Department of Food Science and Human Nutrition		
STUDY LEVEL	Undergraduate		
COURSE CODE	595	SEMESTER	4 th
COURSE TITLE	NUTRITION AND METABOLISM		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	ECTS
Course: Theory		4	3
COURSE TYPE (Foundation course, General knowledge, Scientific area, Developing skills)	Scientific area		
PREREQUISITES	NO		
LANGUAGE	Greek		
IS THE COURSE OFFERED for ERASMUS STUDENTS?	YES (in English)		
COURSE WEB PAGE			

2. LEARNING OUTCOMES

Learning Outcomes
<p>This is the basic introductory course to Nutrition and Metabolism.</p> <p>The goal of this course is to develop an understanding of the processes of digestion, absorption, bioavailability and metabolism of the macronutrients and micronutrients.</p> <p>Additionally, the course describes introductory concepts of the interactions between nutrients and intermediate products of metabolism.</p> <p>Finally, the aim of this course is the understanding by the students of the processes of energy metabolism of the human body's reaction to lack of food, of the effects of exercise on metabolism, of the oxidative and antioxidant processes and the relationship between nutrition and metabolism of macro- and micronutrients with the function of organs of the body.</p> <p>Upon successful completion of the course the student will be able to:</p> <ul style="list-style-type: none"> • Have knowledge and understanding of the basic concepts and the newest developments regarding nutrition and metabolism of macro- and micronutrients, as well as of the relationship of metabolism and the function of the organs of the body. • Will acquire the ability to perceive complex concepts related to Nutrition and Metabolism. • Will be able to understand the processes of digestion, absorption, bioavailability and metabolism of carbohydrates, proteins, lipids, lipoproteins, vitamins, and minerals. • Will be able to understand the body's ability to regulate the homeostasis through control systems of balance and equilibrium. • Will acquire the ability to perceive the relationship between nutrients and chronic cardio-metabolic diseases, such as obesity, diabetes mellitus, cardiovascular diseases, etc.
General Competences
<ul style="list-style-type: none"> • Data search, data analysis and synthesis, information mining • Adaptation to new situations • Autonomous work • Teamwork • Decision making • Respect to physical environment • Development of social, professional and moral responsibility and sensitivity to gender issues • Make criticism and self-criticism • Promotion of creative and inductive thinking

3. COURSE CONTENT

THEORY

1. Basic Concepts
2. Gastrointestinal tract: digestion, absorption, bioavailability of nutrients
3. Mechanism of feeding and energy transformation
4. Why do we eat? (brain and signals, psychology, hormones, biological needs, etc)
5. Carbohydrate metabolism
6. Protein metabolism
7. Lipid metabolism
8. Lipoprotein metabolism
9. Water soluble vitamins metabolism
10. Fat soluble vitamins metabolism
11. Minerals and traces
12. Nutrigenetics – Nutrigenomics
13. Nutrients and chronic cardio-metabolic diseases

4.TEACHING and LEARNING METHODS - Evaluation

TEACHING METHOD	Face to face (theory-laboratory) and remote support via <i>email</i> and remote education using technological platforms (Microsoft Teams, Zoom, Webex meetings, etc) where required
USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES	<ul style="list-style-type: none">• Use of power-point for lectures and videos• Support of teaching procedures with use of e-class electronic platform• Support of students with use of email/e-class

TEACHING ORGANISATION (Lectures, individual or group assignments, field trips, individual study et.c.)	Activities	Workload per semester
	Lectures	40
	Laboratory practices	10
	Individual study	25
	Total contact hours and training	75
STUDENTS EVALUATION	<u>Theory</u> Written final exam (100%) that includes: Multiple choice questions	

5. LITERATURE

All lectures are available at *e-class* as *power-point* presentations

Books:

David Bender. Introduction to Nutrition and Metabolism. Scientific Editing: Aimilia Papakonstantinou, Antonios E. Koutelidakis, Polydeukis Xatzopoulos, Antonis Zampelas. Broken Hill Publishers LTD, 2019, Book Code in Eudoxos System: 77107225