COURSE LAYOUT

# GENERAL

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| **SCHOOL** | **School of Food and Nutritional Sciences** | | | | |
| **DEPARTMENT** | **Department of Food Science and Human Nutrition** | | | | |
| **STUDY LEVEL** | **Undergraduate** | | | | |
| **COURSE CODE** | **595** | **SEMESTER** | | **4th** | |
| **COURSE TITLE** | **NUTRITION AND METABOLISM** | | | | |
| **INDEPENDENT TEACHING ACTIVITIES** | | | **WEEKLY TEACHING**  **HOURS** | | **ECTS** |
| Course: Theory | | | 4 | | 3 |
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| **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** |  | | | | |

1. **LEARNING OUTCOMES**

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| **Learning Outcomes** | | |
| **This is the basic introductory course** to Nutrition and Metabolism.  **The goal of this course is to develop an understanding** of the processes of digestion, absorption, bioavailability and metabolism of the macronutrients and micronutrients.  **Additionally, the course describes introductory concepts** of the interactions between nutrients and intermediate products of metabolism.  **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.  **Upon successful completion of the course the student will be able to:**   * **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** | | |
|  | * 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

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| **TEACHING METHOD** | Face to face (theory-laboratory) and remote support via *email* and remote education using technological platforms (Microsoft Teams, Zoom, Webex meetings, etc) where required |
| **USE OF INFORMATICS and COMMUNICATION TECHNOLOGIES** | * 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 |

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| **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** | **Theory**  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, Antionios E. Koutelidakis, Polydeukis Xatzopoulos, Antonis Zampelas. Broken Hill Publishers LTD, 2019, Book Code in Eudoxos System: 77107225