Course Outline: "7101 - Nutrigenetics - Nutrigenomics"

1. General information

FACULTY/SCHOOL	Physical Education, Sport Science & Nutrition
DEPARTMENT	Nutrition & Dietetics
LEVEL OF STUDY	Undergraduate

COURSE UNIT CODE	7101	**SEMESTER**	7th

COURSE TITLE	Nutrigenetics - Nutrigenomics

INDEPENDENT TEACHING ACTIVITIES in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits	**WEEKLY TEACHNG HOURS**	**CREDITS**
Lectures	3	
αAdd rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4	**3**	**5**

COURSE TYPE *Background knowledge, Scientific expertise, General Knowledge, Skills Development*	Scientific expertise General Knowledge
PREREQUISITE COURSES	No
LANGUAGE OF INSTRUCTION	Greek
LANGUAGE OF EXAMINATION/ASSESSMENT	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/DND_U_273/

2.

2. LEARNING OUTCOMES

Learning Outcomes

*The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:Συμβουλευτείτε το **APPENDIX A***
- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.*
- *Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and*
APPENDIX B
- *Guidelines for writing Learning Outcomes*

The aim of the course is for students to understand the interaction of genetic and nutritional factors in the manifestation of a multitude of phenotypes with the final aim of providing personalized nutritional recommendations for the treatment of complex, multifactorial cardiometabolic diseases. Students will come into contact with the latest data on the analysis of the human genome, the genetic predisposition of chronic complex diseases (such as obesity and type II diabetes) and finally the different response of individuals to nutritional intake depending on the genetic background (Nutrigenetics) as well as the different effect of dietary intake on gene expression (Nutrigenomics). The main goal is to familiarize students with the concepts of Nutrigenetics - Nutrigenomics as well as their scientific and practical application and importance. This course is a combination of all the knowledge that has been acquired in the context of the previous years of studies, with a special emphasis on the fields of clinical nutrition and human genetics.

General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

Search for, analysis and synthesis of data and information by the use of appropriate technologies, Adapting to new situations Decision-making Individual/Independent work Group/Team work Working in an international environment Working in an interdisciplinary environment Introduction of innovative research

Project planning and management Respect for diversity and multiculturalism Environmental awareness Social, professional and ethical responsibility and sensitivity to gender issues Critical thinking Development of free, creative and inductive thinking ...... (Other.......citizenship, spiritual freedom, social awareness, altruism etc.) ....

- Working in an interdisciplinary environment
- Introduction of innovative research
- Development of free, creative and inductive thinking
- Critical thinking

3.

3. COURSE CONTENT

- Basic principles of human genetics. Introduction to the Science of Gene-Nutrition Interactions (Nutrigenetics - Nutrigenomics)
- Genetic predisposition to macronutrient intake and alcohol consumption
- Interactions of genetic variants and dietary intake in obesity
- Interactions of genetic variants and dietary intake in non-alcoholic fatty liver disease
- Interactions of genetic variants and dietary intake on glycemic index levels and type II diabetes mellitus
- Interactions of genetic variants and dietary intake on lipid levels and cardiovascular disease
- Dietary zinc intake, inflammatory markers and aging
- Genetic variations in sleep regulation, chronotype and dietary intake
- Genetic predisposition to coffee intake and association with health markers
- Interactions of genetic variants and dietary intake and bone phenotypes
- Epigenetic changes and cardiometabolic diseases

4.

4. TEACHING METHODS - ASSESSMENT

MODES OF DELIVERY *Face-to-face, in-class lecturing, distance teaching and distance learning etc..*	face-to-face

USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in teaching, Laboratory Education, Communication with students*	1. Lectures in power point documents 2. Research or review papers in pdf documents 3. The lectures in pdf documents that are announced to the students through the eclass platform The students get in touch with the instructor either directly (through face to face contact or email) or indirectly (through notes posted on the poster boards and the website of the Department).	
COURSE DESIGN *Description of teaching techniques, practices and methods: Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc. The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.*	*Activity/Method*	*Semester workload*
	Lectures	50
	Study and analysis of bibliography	30
	Independent study	45
	Total	*125*
STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc.* *Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.*	The assessment language is Greek. Students are evaluated based on their performance in a written final exam (100% of the final grade).	

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5. SUGGESTED BIBLIOGRAPHY

-- Suggested bibliography:

1. Μοριακή Γενετική του Ανθρώπου, Γ. Δεδούσης, Utopia, 2022
2. Handbook of statistical genetics υπό Balding, D. J., Bishop, Martin J., Cannings, Christopher 1942- Chichester, UK ; Hoboken, NJ : J. Wiley & Sons c2007.

-- Scientific journals:
- Journal of Nutrigenetics and Nutrigenomics [online] Available at: https://www.karger.com/Journal/Home/275177
- Genes & Nutrition [online] Available at: https://genesandnutrition.biomedcentral.com/

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