Course Outline: "7108 - Free Radicals and Antioxidants in Nutrition"

1. General information

FACULTY/SCHOOL	Physical Education, Sport Science & Nutrition		
DEPARTMENT	Nutrition & Dietetics		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	**7108**	**SEMESTER**	**7th**
COURSE TITLE	**Free Radicals and Antioxidants in Nutrition**		

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	2	
αAdd rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4	**2**	**3**

COURSE TYPE *Background knowledge, Scientific expertise, General Knowledge, Skills Development*	Scientific expertise
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_258/

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*

This course offers valuable knowledge around the modern field of Redox Biology. Upon completion of the lectures, the students will have learned about the generation mechanisms of free radicals and the action of antioxidants. The course delves into the ways that nutritional antioxidants function, whereas the manifold biological roles of free radicals and antioxidants on exercise and disease are analyzed. Finally, the students will be able to seek research studies from the international literature by using the most established search engines (e.g., Pubmed) and, finally, they will have developed the ability to publically present a scientific article, which is relevant to the research field of the course.

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.) …….

- Individual/Independent work
- Group/Team work
- Working in an interdisciplinary environment
- Introduction of innovative research

- Development of free, creative and inductive thinking

3. COURSE CONTENT

- Introduction in the theory of free radicals
- Basic principles of Redox Biology
- Historical overview
- Oxygen – Free radical formation
- In vitro Redox Biology
- Reactive species
- Mechanisms of reactive species generation
- Biological roles of reactive species
- Antioxidant mechanisms
- Redox biomarkers
- Nutritional antioxidants
- Redox biology of exercise
- Redox biology of diseases

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. Laptops for the projection of relevant videos 4. 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	2 × 12 = 24
	Presentations	2 × 1 = 2
	Literature analysis	10
	Preparation of public presentation	14
	Preparation for the exams	25
	Total	***75***
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. The performance of the students is assessed through written exams (50%) and the presentation of an article relevant to the scope of the course (50%).	

5. SUGGESTED BIBLIOGRAPHY

--Suggested bibliography:

- Halliwell, B., Gutteridge, J.M.C., 2015. Free radicals in biology and medicine, 5th ed. Oxford

University Press.

-*Scientific Journals:*
- Redox Biology
- Free Radical Biology and Medicine
- Free Radical Research
- Toxicology Reports
- Nutrients
- Food and Chemical Toxicology
- European Journal of Applied Physiology
- Redox Report
- Biomarkers