NUTRITIONAL VALUE OF AGRICULTURAL PRODUCTS AND HUMAN DIET

1. GENERAL

SCHOOL	AGRICULTURAL SCIENCES		
DEPARTMENT	AGRICULTURE		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	AGR_1004	**SEMESTER OF STUDIES**	10^{o}
COURSE TITLE	Nutritional Value of Agricultural Products and Human Nutrition		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
Lectures	3	
Seminars	1	
Total	4	5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialized General Knowledge
PREREQUISITE COURSES:	Typically, there are not prerequisite courses.
TEACHING AND ASSESSMENT LANGUAGE:	Greek. Teaching may be however performed in English in case foreign students attend the course.
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes
COURSE WEBPAGE (URL)	

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

At the end of this course the students will attain:

• acquires basic knowledge of Agrifoods and the effect of their nutritional value on human nutrition.

• understands basic elements of the nutritional value of a) food and b) products and foods of primary production.

• can apply the above knowledge to the development of nutritionally balanced foods for human nutrition.

• can utilize this knowledge in other agricultural subjects

• understands and interprets the role of nutrients in the normal functioning of the human body and the effects of their excessive intake or lack.

• can argue and critically address different dietary patterns

General Abilities

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas
Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking

Upon completion of the course, the student will have further developed the following general skills:
To deal with humans' requirements of - Energy balance - Agrifood composition from a dietary point of view.
Search and analyze information using information and communication technologies
Autonomous and Teamwork in an interdisciplinary environment
Promotion of free, creative, and inductive thinking
Exercising substantive criticism of the various dietary patterns

3. SYLLABUS

Theory:

2. Products of primary production and their nutritional value.
Elements of human nutrition. The dietary requirements of Humans- Energy balance - Food composition from a dietary point of view.
3. Intake – Digestion – Absorption – Metabolism of Carbohydrates – Diabetes mellitus – Glycemic effect of food.
4. Absorption – Metabolism of proteins and amino acids.
5. Fatty substances – Lipids – Intake – Digestion – Absorption – Metabolism – Adipose tissue – Diseases (obesity, atherosclerosis).
6. Functions of water in the human body – Absorption – Excretion – Contamination and purification of drinking water.
7. non-dietary nutrients and contaminants.
8. Bioactivity of food nutrients.
9. Functional foods. Probiotic foods. Superfoods.
10. Antioxidants – Vitamins – Food supplements.
11. Novel and genetically modified foods – Foodstuffs.
12. Mediterranean diet – Vegetarianism – Omophagia – Fast food.
13. Dietary guidelines. Specialized diets.

The **Laboratory exercises** include experiments and exercises in the laboratory and in the field:
1. Bioactivity of food nutrients, human nutrition.
2. Functional foods. Probiotic foods.
3. Superfoods.
4. Antioxidants – Vitamins – Food supplements.
5. Novel and genetically modified foods – Foodstuffs.
6. Nutritional value of plant products
7. Mediterranean diet – Vegetarianism – Omophagia – Fast food.

4. TEACHING AND LEARNING METHODS - EVALUATION

TEACHING METHOD *Face-to-face, Distance learning, etc.*	Lectures in the class and in the laboratory (face to face)
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES *Use of ICT in teaching, laboratory education, communication with students*	Use of Information and Communication Technologies (ICTs) (e.g. powerpoint) in teaching. Direct communication with the students (face to face and by e-mail), Support of the learning process and uploading of the educational material to the electronic platform (e-class): https://eclass.upatras.gr
TEACHING METHODS *The manner and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.* *The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS*	
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	The evaluation criteria are presented and analyzed to the students at the beginning of the semester. • Final written theory exam (60%). • Final examination of laboratory exercises (40%). In case of advances, they participate by 30% in the final score, respectively.

Activity	***Semester workload***
Lectures (3 conduct hours per week x 13 weeks)	39
Seminars (1 contact hour per week × 13 weeks) with personal reports	13
Writing reports	4
Final examinations (2 conduct hours each)	2
Hours for private study of the student and preparation for mid-term or/and final examination / Final examination	67
Total number of hours for the Course (25 hours of work-load per ECTS credit)	***125 hours (total student work-load)***

5. RECOMMENDED LITERATURE

Books:

1. Γαλανοπούλου,Ν., Ζαμπετάκης, Γ., Μαυρή, Μ., και Σιαφάκα Α., Διατροφή και Χημεία Τροφίμων, Εκδόσεις Σταμούλη, Αθήνα 2007
2. Κουρέτας Δημήτρης, Γκουτζουρέλας Νικόλαος, Τέκος Φώτιος, Διαλειμματική Νηστεία & Αποφυγή Νόσων, Εκδόσεις ΑΡΜΟΣ, Κωδικός προϊόντος: 978-960-615-175-0.
3. Κουτελιδάκης, Λειτουργικά τρόφιμα, Εκδόσεις ΖΗΤΗ, 2014.
4. Biesalski and Konrad, Εγχειρίδιο διατροφής, Εκδόσεις Broken Hill Publishers Ltd, 2008.
5. Taylor S.L. 1998, Advances in Food and Nutrition Research, Academic Press.

Journals:

- European Journal of Nutrition
- Journal of Nutrition Education and Behavior
- Journal of Nutrition