

HELLENIC MEDITERRANEAN UNIVERSITY

School of Health Sciences

Department of Nutrition and Dietetics Sciences

COURSE OUTLINES

3 courses

ENVIRONMENTAL RESOURCES AND FOOD PRODUCTION

COURSE OUTLINE

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.2.007.0	SEMESTER	255th
COURSE TITLE	Environmental Resources and Food Production		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	WEEKLY TEACHING HOURS	CREDITS
	2	4
Total	2	4

COURSE TYPE general background, special background, specialised general knowledge, skills development	Theory with two laboratories exercises
PREREQUISITE COURSES	No previous course teaching is required
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English)
COURSE WEBSITE (URL)	

2. LEARNING OUTCOMES
Learning outcomes
Food and natural environment are in connection. Its imprint food is terms that occupy the modern concept of sustainability. Inside within the framework of the course are the students will come in contact with the environmental education, technical terms and the combination of food science on issues related to the connection between nutrition and the environment, management water resources and more generally the ecological management of food issues.
General Competences
Knowledge and application in ecological studies with reference to environmental social and economic issues using equations on sustainable development. Knowledge of the general environmental framework and actions within the framework of international organizations and EU legislation. Practical water management issues, with emphasis on arid regions. Environmental awareness in food management and especially in the issue of food waste.

3. SYLLABUS

- Introduction to the aims and content of the course (interpretation of the terms Natural resources-Food production)
- Environment Food, Education- Sustainability- ESG
- Health Nutrition Environment, Healthy life and consumption of local products
- Development Indicators, The concept of environmental Sustainability Indicators, environment, Society.
- Series of Equations based on the Environment and sustainability
- Economic Principles of Food Production Factors of Production, Work, Means of Production,
- Efficiency Degree, Production Functions
- Food Processing Environment, Processing of Agricultural Products, economy and science,
- Processing methods, Benefits from the processing of agricultural products, Biofuels,
- Water in Food Global water management issues.
- Food Waste - The Phenomenon, Methods of measuring food waste
- From Sustainable Production to Sustainable Consumption, The concept of production, The concept of sustainable production,
- The challenges of sustainability

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	in situ						
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	• Support of learning process through the asynchronous platform e-class • Use of PowerPoint during lectures. • Use of AI for information search and processing analysis						
TEACHING METHODS The manner and methods of teaching are described in detail.	<table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Lectures & Practice Exercises</td><td>1</td></tr> <tr> <td>Course total</td><td>1</td></tr> </table>	Activity	Semester workload	Lectures & Practice Exercises	1	Course total	1
Activity	Semester workload						
Lectures & Practice Exercises	1						
Course total	1						
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	based on the notes given to them but also the participation in the course activities and in at least 9 of the 12 total lectures, they will have to make a presentation on one of the topics that will be agreed with the professor and they will have to develop and defend it.						

5. ATTACHED BIBLIOGRAPHY

Alvarez de los Mozos, E., Badurdeen, F., & Dossou, P. E. (2020). Sustainable consumption by reducing food waste: A review of the current state and directions for future research. *Procedia Manufacturing*, 51, 1791-1798.

Gayathri Vaidyanathan, Healthy Diet for People and the Planet, *Nature*, Vol 600, 2 December 2021

Georgios Tsikalakis, Katerina Laouri, Eleftheria Neofotistou and Nikolaos Thalassinou, (2024), "The Integration of the Lion Fish in the Diet of the Cypriot as a Means of Maintaining Marine Ecosystem", *E3S Web Conf.*, 585, 03001

Eleftheria Neofotistou, Georgios Tsikalakis, Dimitra Kafousia and Panagiotis Bourbourakis, (2024) "Temporal Investigation of the Changes in the Quality Parameters of the Surface Water of the River Pantelis-Sitia" *E3S Web Conf.*, 585, 09006 DOI: <https://doi.org/10.1051/e3sconf/202458509006>

Georgios Tsikalakis, Eleftheria Neofotistou, Emmanouil Kontogiannakis, Pau Alonso-Monasterio, Mehmet Caglayan Ercair, Regina Fernandez- Canez and Maria Martinez Perez-Accino, "Sustainable development as an education tool for primary school students through SCRATCH code", *E3S Web of Conferences* 436, 06007,

Georgios J. Tsikalakis, Nikolaos J. Makrinakis, Panagiotis J. Bourbourakis, and Eleftheria D. Neofotistou "Economic and Sustainable Development in Eastern Crete Through the Lithines Irrigation Dam", *E3S Web of Conferences* 436, 04005 (2023),

Panagiotis J. Bourbourakis and Georgios J. Tsikalakis 2022 "Transforming a power plant into an Educational Centre: Agia Small Hydroelectric Power Plant" *IOP Conf. Ser.: Earth Environ. Sci.* 1123 012057

Georgios Tsikalakis, "Can the Commission Delegated Decision (EU) 2019/1597 contribute the reduce food waste?" *Evrigenis Yearbook?of International and European Law (EvrYIEL)* Volume 3 (2021), ed. Sakoulas, 272-280, **ISSN**: 2654-1890

Georgios J. Tsikalakis, Panagiotis J. Bourbourakis and Nikolaos Makrinakis, "Exploitation of hydroelectric potential of the irrigation reservoirs in Eastern Crete" *Desalination and Water Treatment*, 255 (2022) 74-82

Tsikalakis G.J., "The Moral dimension of Ecology in Teaching of Nutrition" *Advances in Ecological and Environmental Research*, Vol. 4, Issue 5, May 2019, p. 147-158. (ISSN 2517-9454 USA).

Tsikalakis G.J., "The Mediterranean Diet as a Factor in Environmental Education" *Journal of Environmental Science and Engineering B* 7 (2018) 316-323

CLINICAL NUTRITION II

COURSE OUTLINE

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.6.001.0	SEMESTER	2nd
COURSE TITLE	Clinical Nutrition II		
INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	WEEKLY TEACHING HOURS	CREDITS	
	6	6	
Total	6	6	
COURSE TYPE general background, special background, specialised general knowledge, skills development	Mandatory		
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English		
OFFERED TO ERASMUS STUDENTS	Yes (in English)		
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/YD31/		
2. LEARNING OUTCOMES			
Learning outcomes			
The aim of the course is to provide an in depth understanding of the principles and the use of Medical Nutrition Therapy (MNT) (or Clinical nutrition) within the context of secondary and tertiary health prevention. The students gain knowledge in relation to the physiology and epidemiology of several diseases, and the use of evidence-based nutritional guidelines for diseases' treatment. By the end of the course, students are expected to: • Describe the diseases' epidemiology in adulthood • Identify high risk patients ? Assess the nutritional status of acute and chronic disease patients • Make and prioritize nutrition diagnoses for patients with acute or chronic diseases of gastrointestinal tract/liver/ pancreas/bladder/kidneys and cancer • Decide and describe the nutrition intervention and nutrition counseling for the acute or chronic diseases of gastrointestinal tract/ liver/ pancreas/ bladder/ kidneys and cancer • Supervise the patient diet and guide him/her appropriately to enhance compliance with the MNT • Monitor and evaluate the nutrition intervention (MNT) using validated markers and outcomes and redesign the nutrition intervention according to the patients' needs			
General Competences			
In the context of this course the trainee develops general skills in: • scientific literature search, analysis, and synthesis by using the appropriate technology • critical thinking for deciding on the proper MNT strategy • team working • working in interdisciplinary groups • Finally, the trainee learns to develop presentation and writing skills			

3. SYLLABUS

The content gives emphasis on the nutrition assessment, nutrition diagnosis, nutrition intervention and nutrition monitor and evaluation of patients with the aim to improve their health and quality of life.

Specifically, the course covers the following topics:

- Medical nutrition therapy (definition, types, routes of feeding)
- Gastroesophageal reflux
- Inflammatory Bowel Diseases (irritable bowel and Crohn's disease)
- Alcoholic and non-alcoholic liver disease
- Cirrhosis
- Acute and chronic pancreatitis
- Acute and chronic bladder disease
- Dysphagia
- Cancer
- Chronic kidney disease
- End Stage Renal Disease

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY

Face-to-face, Distance learning, etc.

Face-to-face

USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

Use of ICT in teaching, laboratory education, communication with students

Support of learning process through the asynchronous platform e-class

- Use of PowerPoint during lectures.
- Email, teleconference (communication with students)

TEACHING METHODS

The manner and methods of teaching are described in detail.

Activity

Semester workload

Lectures (2X12)

24

Tutorials (2X12)

24

Literature research and critical reading

10

Practical exercises (2X12)

24

Homework

10

Reading

58

Course total

150

STUDENT PERFORMANCE EVALUATION

Description of the evaluation procedure

The course evaluation is conducted in Greek based on international literature, and it is announced to the students during the first lecture of the semester. Assessment criteria are referred upon e-class. Exam degrees are uploaded at e-class and exam papers are available to students. **Theory - Tutorial:**

- Final written exam test: 65%
- Semester group presentation: 10%
- Homework preparation and active participation in weekly research questions: 25%

Practical exercises:

- Weekly diet plan design: 20%
- Semester assignment: 10%
- Final written exam test: 70%

5. ATTACHED BIBLIOGRAPHY

- Zabelas, A. (2022) Clinical Dietetics and Nutrition with Pathology Principles. Athens: Broken Hill Publishers LTD
- Mahan L.K., and Raymond J.L. (2017) Krause's Food and The Nutrition Care process. 14th Edition, Elsevier Inc., Missouri
- Nelms M, Sucher KP, Lacey K. (2016) Nutrition therapy and Pathophysiology. 3rd Edition, Cengage Learning, Boston

FOOD QUALITY CONTROL AND ASSURANCE

COURSE OUTLINE

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.6.006.0	SEMESTER	2nd
COURSE TITLE	Food Quality Control and Assurance		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	WEEKLY TEACHING HOURS	CREDITS
	2	3
Total	2	3

COURSE TYPE general background, special background, specialised general knowledge, skills development	Major
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English)
COURSE WEBSITE (URL)	

2. LEARNING OUTCOMES
Learning outcomes
Food quality encompasses the set of characteristics that determine the overall acceptability of food products to consumers. These characteristics include sensory (organoleptic) attributes, nutritional value, compliance with regulatory requirements, safety, authenticity, and sustainability. Food quality control comprises a systematic series of activities designed to assess whether the quality attributes of a food product conform to predefined specifications and acceptable tolerance limits. The primary objective of this course is to examine the quality characteristics of major food groups and to present the principles, methodologies, and analytical techniques used to evaluate and ensure compliance with established quality standards and specifications.
General Competences
Following completion of this course, students should be able to: • To identify food quality parameters for specific food groups • Understand and use food quality assessment tools (e.g. nutrition labelling) • To acquire knowledge and experience about laboratory methods and techniques • To familiarize with fundamental food processing methods

3. SYLLABUS

- Introduction to food quality & quality control
- Hazard Analysis Critical Control Points system (HACCP)
- Food Labeling – Nutritional Claims
- Quality control in Milk and dairy products
- Quality control in Honey
- Quality control in Fats and oils
- Quality control in Egg
- Methods for assessing food quality (Molecular, Physicochemical and Sensory analysis)
- Fundamentals of Food processing

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face to face (physical presence)										
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	• Support of learning process through the asynchronous platform e-class • Delivery of lectures using PowerPoint • Student communication (Email)										
TEACHING METHODS The manner and methods of teaching are described in detail.	<table> <tr> <th>Activity</th><th>Semester workload</th></tr> <tr> <td>Lectures</td><td>24</td></tr> <tr> <td>Assignment</td><td>12</td></tr> <tr> <td>Non-directed study</td><td>48</td></tr> <tr> <td>Course total</td><td>84</td></tr> </table>	Activity	Semester workload	Lectures	24	Assignment	12	Non-directed study	48	Course total	84
Activity	Semester workload										
Lectures	24										
Assignment	12										
Non-directed study	48										
Course total	84										
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	1. Final written exam 2. Homework and class presentations of group projects 3. Group Discussions 4. Attendance and Participation										

5. ATTACHED BIBLIOGRAPHY

- Ingredient Interactions, Effects on Food Quality, Second Edition, Edited By Anilkumar G. Gaonkar, Andrew McPherson (2nd Edition), Boca Raton, CRC PRESS
- Food: The Chemistry of its Components: 6th Edition, RSC smart materials, Royal Society of Chemistry, Edited by Tom Coulter (4TH Edition), Royal Society of Chemistry

