ERASMUS

HELLENIC MEDITERRANEAN UNIVERSITY

COURSE OUTLINES

Department of Nutrition and Dietetics Sciences

School of Health Sciences

Academic Year 2026-2027

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ENVIRONMENTAL RESOURCES AND FOOD PRODUCTION

COURSE OUTLINE

Responsible: Georgios Tsikalakis

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**	Winter/Spring
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) — Both Winter and Spring Semesters
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.	**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 Thalassinos, (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 Ercakir, 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

NUTRITION THROUGH THE LIFECYCLE I

COURSE OUTLINE

Responsible: Christoforos Papandreou

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.3.002.0	**SEMESTER**	1st
COURSE TITLE	Nutrition Through the Lifecycle I		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	4
Total	**0**	**4**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Ειδίκευσης
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Winter Semester
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/NDS149/

2. LEARNING OUTCOMES

Learning outcomes

The aim of this course is to provide students with an understanding of the fundamental principles of nutrition and the factors that determine the nutritional requirements of healthy individuals throughout the life cycle, from the preconception period through adolescence.

Upon successful completion of the course, students will be able to:

- **describe** the physiological and nutritional requirements from the preconception period through adolescence;
- **interpret** current evidence-based dietary recommendations for each stage of the life cycle;
- **identify** the major nutritional risks and the most common nutrition-related problems affecting women of reproductive age, pregnant and lactating women, infants, children, and adolescents;
- **assess** dietary intake and nutritional status of healthy individuals across these stages of the life cycle;
- **identify** nutrition-related problems using the systematic **Nutrition Care Process (NCP)**;
- **design** basic dietary interventions for women before conception, during pregnancy and lactation, as well as for infants, children, and adolescents;
- **analyse** and **evaluate** meal plans using food exchange systems and appropriate nutritional assessment tools;
- **critically appraise** the scientific literature and **apply** evidence-based nutrition recommendations in dietetic and clinical practice.

General Competences

Upon successful completion of the course, students will have developed the ability to:

- search for, analyse, and synthesise data and information using appropriate technologies;
- make informed decisions;
- work independently;
- collaborate effectively in teams;
- work in interdisciplinary environments;
- exercise critical thinking and self-reflection;
- demonstrate creative and inductive thinking;
- demonstrate social, professional, and ethical responsibility in nutritional assessment and the planning of dietary interventions.

3. SYLLABUS

Theoretical Component

- Fundamental principles of nutrition and the role of nutrition across the life course
- Nutrition before conception
- Nutrition during pregnancy
- Nutrition during lactation and breastfeeding
- Infant nutrition (growth monitoring and complementary feeding)
- Nutrition of preterm infants
- Nutrition of toddlers and preschool children
- Nutrition during childhood
- Nutrition during adolescence
- Special topics in nutrition (vegetarian diets)

Laboratory Component

Students receive practical training in nutritional assessment, identification of nutrition-related problems, and the design of basic dietary interventions for women before conception, pregnant and lactating women, infants, children, and adolescents, following the **Nutrition Care Process (NCP)** framework. They also develop practical skills in assessing dietary intake, analysing and evaluating meal plans using food exchange systems, and applying evidence-based dietary guidelines to nutrition and dietetic practice.

Αυτή η εκδοχή είναι κατάλληλη για **ECTS Course Catalogue** και χρησιμοποιεί τη διεθνώς αποδεκτή ορολογία:

- **before conception** αντί για *preconception* όταν αναφέρεται ως τίτλος ενότητας,
- **lactation and breastfeeding** (καλύπτει και τη φυσιολογία και την πρακτική του θηλασμού),
- **complementary feeding** αντί του κυριολεκτικού *weaning*, που είναι ο όρος που χρησιμοποιείται στις διεθνείς διατροφικές κατευθυντήριες οδηγίες (WHO, ESPGHAN),
- **Nutrition Care Process (NCP)**, που αποτελεί τη διεθνή επίσημη ορολογία.

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	
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	

5. ATTACHED BIBLIOGRAPHY

NUTRITIONAL RESEARCH METHODOLOGY

COURSE OUTLINE

Responsible: Theodora Mouratidou

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.3.006.0	**SEMESTER**	1st
COURSE TITLE	Nutritional Research Methodology		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	2
Total	**0**	**2**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Special background
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Winter Semester
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/NDS188/

2. LEARNING OUTCOMES

Learning outcomes

The aim of the course is to introduce students to the fundamental principles of research methodology, including the design of epidemiological studies and clinical trials, the use of research methods and tools for data collection, ethical considerations in research, and the principles of data analysis and interpretation. Practical laboratory sessions complement the theoretical component of the course by enabling students to apply research concepts and methods in practice.

Upon successful completion of the course, students will be able to:

- demonstrate knowledge of the design, conduct, and interpretation of nutritional epidemiological studies;
- understand the principles of evidence-based nutrition and dietetic practice and apply international and national guidelines to disease prevention and dietary management;
- critically appraise the scientific literature and interpret research findings;
- apply appropriate research methods and ethical principles in nutrition and dietetics research;
- work effectively both independently and as members of multidisciplinary teams; and
- communicate scientific information effectively through oral presentations and scientific writing.

General Competences

The course contributes to the development of the following generic competences:

- Ability to search for, analyse, and synthesise data and information using appropriate technologies;

- Adaptability to new situations;
- Decision-making;
- Ability to work independently and as part of a team;
- Ability to work in an interdisciplinary environment;
- Critical thinking;
- Ability to critically appraise scientific literature; and
- Oral and written communication skills.

3. SYLLABUS

The course focuses on the principles and applications of research methodology in nutrition and dietetics. Specifically, the course covers the following topics:

- Introduction to scientific research
- Principles of research methodology: research questions and hypotheses, study protocols, populations and sampling, sources of bias and error, and pilot studies
- Observational epidemiological studies: cross-sectional, case–control, and cohort studies
- Clinical trials
- Systematic reviews and meta-analyses
- Research ethics and bioethics
- Reliability and validity of research instruments
- Literature searching and retrieval of scientific evidence
- Critical appraisal of nutritional epidemiological studies and assessment of the quality of scientific evidence

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face (classroom-based)
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	• Use of ICT in teaching • Use of ICT for communication with students via the University's e-learning platform
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	• Final oral examination (80%) • Individual or group assignments (20%)

5. ATTACHED BIBLIOGRAPHY

- Willet W. Nutritional Epidemiology. 3rd Edition, Oxford, 2013.
- Gibney, J.M., Margetts, B.M., Kearney, J.M., Arab, L., Guerrero, S.,.Public Health Nutrition. Blackwell Science Ltd., Oxford, 2004.
- Lovegrove, JA, Hodson, L, Sharma, S. Nutrition research methodologies. Hoboken, NJ: Wiley Blackwell, 2015.
- Friis Robert H., & Sellers Thomas A. Epidemiology and Public Health, Broken Hill Publishers LTD, Limasol, 2011.

NUTRITION AND METABOLISMS II (MACRONUTRIENTS)

COURSE OUTLINE

Responsible: Georgios Fragkiadakis

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.4.001.0	**SEMESTER**	Winter/Spring
COURSE TITLE	Nutrition and Metabolisms II (Macronutrients)		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	6
Total	**0**	**6**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Special background
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Both Winter and Spring Semesters
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/YD211/

2. LEARNING OUTCOMES

Learning outcomes

Nutrients that are needed in large amounts are called macronutrients. There are three classes of macronutrients: carbohydrates, lipids, and proteins. Macronutrients are carbon-based compounds that can be metabolically processed into cellular energy through changes in their chemical bonds. Chemical energy is converted into cellular energy known as ATP that is utilized by the body to perform work and conduct basic functions. The course focuses on the interconversion of macronutrients, the energy they offer and how a nutritionist-dietitian can utilize them in the diet (glycemic index, glycemic load etc.).

General Competences

Within the context of this course:

The student acquires knowledge of the individual metabolic pathways, which constitute the main possibilities for the utilization of macronutrients, carbohydrates, lipids, proteins.

The student understands the logic that governs the metabolic processes of macronutrients (carbohydrates, lipids, proteins), their interaction as well as their utilization in the phenomenon of life.

Finally, the student learns to organize, analyze and explain experimental data concerning macronutrients and functional components of foods.

3. SYLLABUS
The study of the role of the three main nutrients of foods in human nutrition. The necessity of their participation in the diet and to highlight their interactions at a metabolic level, as well as the problems created by their deficient or unbalanced intake. -Structure and characteristics of carbohydrates. Digestion and absorption of carbohydrates. Contribution of carbohydrates to the structure and function of the human body. Glycemic Index, Glycemic Load, Satiety Index, Insulin Index, Applications in Modern Dietetics. -Structure and properties of proteins-amino acids. Protein digestion and absorption. Human requirements for proteins-amino acids, biological value of proteins, methods of calculating them. Protein sources, bioavailability of amino acids. Disorders from insufficient or excessive intake of proteins-amino acids. -Structure and properties of fats found in food, digestion and absorption of fats. Human needs for fats, essential fatty acids. Effect of fat intake and type of fatty acids on health. Problems in fat metabolism. Disorders related to unbalanced intake and metabolism of fats. - Study of digestion, absorption, bioavailability and metabolism of proteins, vitamins, minerals and water, as well as their interactions. Interactions between nutrients and intermediate products of metabolism. Effect of nutrient metabolism on body function. Energy requirements of the individual and body composition.

4. TEACHING and LEARNING METHODS - EVALUATION	
DELIVERY Face-to-face, Distance learning, etc.	Face to face, Distance learning, etc
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	Use of PowerPoint during lectures. Email, Skype (communication with students)
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** / **Semester workload** ESSAYS / 12 **Course total** / **12**
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Written midterm exam (progress, 50%) with Answer, Essay Development Questions, Problem Solving, Written Assignment, short answer questions and exercises Report / Report, Oral Examination, Public Presentation, Laboratory Work, extended answer Clinical Examination of a Patient, Artistic Interpretation, Other / Other Written final exam (50%) with short answer questions and evaluation exercises are listed explicitly and if and where they are accessible from students. extended answer.

5. ATTACHED BIBLIOGRAPHY
Nutrition and Metabolism (The Nutrition Society Textbook), by Helen M. Roche (Editor), Ian A. Macdonald (Editor), Annemie M. W. J. Schols Metabolism at a Glance, by J. G. Salway (Author)

FOOD MICROBIOLOGY AND HYGIENE

COURSE OUTLINE

Responsible: Georgios Fragkiadakis

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.4.005.0	**SEMESTER**	Winter/Spring
COURSE TITLE	Food Microbiology and Hygiene		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	5
Total	**0**	**5**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Ειδίκευσης
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Both Winter and Spring Semesters
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/YD237/

2. LEARNING OUTCOMES

Learning outcomes

The aim of the course is to teach students the sources of food contamination, the types of foodborne hazards and how to deal with them in food establishments. The training of dietitians in hygiene issues is a necessary prerequisite for working in areas where they directly or indirectly come into contact with food intended for consumption. The course includes a laboratory with mandatory attendance for the final documentation of the training, in accordance with the requirements of EFET or relevant food safety certification bodies. It is expected that upon completion of the course, students will be able to:

Students acquire basic knowledge of microbiology and food hygiene, with a main focus on the relationships of microorganisms with food and humans.

They supervise the design and implementation of food safety and hygiene guidelines and food services.

They correctly interpret the findings of recent scientific research on the problems of microbiology and food hygiene.

They summarize and evaluate the literature on contemporary research activity in food hygiene and microbiology.

General Competences

The course contributes to the development of general skills such as:

- to identify food-borne hazards and plan/implement the corresponding preventive measures

- to understand food safety management systems, with emphasis on the level of application in hospitals and mass catering
- to design production flow charts and analyze them to identify hazard points and intervention points for food protection
- to identify critical control points and manage HACCP plans

3. SYLLABUS

The most important microorganisms in microbiology and food hygiene (fungi, yeasts, bacteria) - their morphological, cultural, physiological and biochemical characteristics, reproduction, relationship with food and public health). - Nutrition of microbes, their food types and the effect of physicochemical factors on the growth and activities of microbes (temperature, pH, radiation, pressure). - The growth of unicellular microorganisms and its parameters (number of divisions, generation time, growth rate, age of bacteria, growth curve and phases). - The natural sources of food contamination (microbial flora of plants, animals, soil, water, air), principles of food preservation (heat, cold, etc.). - Microbiology, hygiene and the control of water, milk, meat. - Diseases transmitted by foods contaminated with pathogenic microorganisms (foodborne infections and food poisoning - preventive measures). - Protozoa important in microbiology and food hygiene. - Metazoa important in microbiology and food hygiene. - Viruses important in microbiology and food hygiene.

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face to face, Distance learning, etc
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	USE OF TECHNOLOGY Use of ICT in laboratory education INFORMATION AND COMMUNICATION Use of ICT in communication with students through the Use of ICT in Teaching, in the electronic platform e-class Laboratory Education, in Communication with students
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** ESSAYS | 12 **Course total** | **12**
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Written midterm exam (progress, 50%) with Language of Assessment, Assessment methods, Formative or Summative, Short answer questions and Multiple Choice exercises, Short extended answer questions, Essay Development Questions, Written final exam (50%) with Problem Solving, Written Assignment, Report / Report, Oral Exam, short answer questions and extended answer exercises Public Presentation

5. ATTACHED BIBLIOGRAPHY

Food Microbiology

By Martin R. Adams; Peter J. McClure; Maurice O. Moss

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CLINICAL NUTRITION II

COURSE OUTLINE

Responsible: Anastasia Markaki

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) — Spring Semester
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 JL. (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

NUTRITIONAL EPIDEMIOLOGY

COURSE OUTLINE

Responsible: Theodora Mouratidou

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.6.005.0	**SEMESTER**	2nd
COURSE TITLE	Nutritional Epidemiology		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	4
Total	**0**	**4**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Ειδίκευσης
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Spring Semester
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/NDS202/

2. LEARNING OUTCOMES

Learning outcomes

The aim of the course is to introduce students to the fundamental concepts of epidemiology and nutritional epidemiology, and to provide them with knowledge of the design, appraisal, and interpretation of epidemiological studies, the sources and methods of dietary data collection, and the use of scientific evidence to inform dietary guidelines, public health interventions, and nutrition policies. Particular emphasis is placed on the role of nutrition in the primary and secondary prevention of non-communicable diseases and obesity, as well as on the epidemiology of the major diet-related chronic diseases.

Upon successful completion of the course, students will be able to:

- explain the role of diet and other environmental factors in the aetiology and prevention of non-communicable diseases;
- describe the strengths and limitations of the major epidemiological study designs and evaluate their implications for the interpretation of findings in nutritional epidemiology;
- recognise the influence of socioeconomic inequalities on dietary behaviours and population health;
- explain the principles of evidence-based practice and their importance in the development of dietary recommendations and public health nutrition policies; and
- describe the epidemiology of the major non-communicable diseases, including cancer, cardiovascular diseases, diabetes, and obesity, and interpret the role of nutrition in their prevention and management.

General Competences

The course contributes to the development of the following generic competences:

- Ability to search for, analyse, and synthesise data and information using appropriate technologies
- Adaptability to new situations
- Decision-making
- Ability to work independently and as part of a team
- Ability to work in an interdisciplinary environment
- Critical thinking and self-reflection

3. SYLLABUS

The course focuses on the applications of nutritional epidemiology in disease prevention and health promotion. Specifically, the course covers the following topics:

- Study design and research methodology in nutritional epidemiology
- Causality and dietary intake assessment
- Biochemical markers and physical activity indicators in nutrition research
- Evidence-based dietary recommendations
- Food insecurity
- Diet and cancer
- Diet and diabetes
- Diet and cardiovascular diseases
- Diet and obesity
- Nutrition policies

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face (classroom-based)
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	• Use of ICT in teaching • Use of ICT for communication with students via the University's e-learning platform
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	• Final oral examination (80%) • Individual or group assignments (20%)

5. ATTACHED BIBLIOGRAPHY

- Willet W. Nutritional Epidemiology. 3rd Edition, Oxford, 2013.
- Gibney, J.M., Margetts, B.M., Kearney, J.M., Arab, L., Guerrero, S.,.Public Health Nutrition. Blackwell Science Ltd., Oxford, 2004.
- Lovegrove, JA, Hodson, L, Sharma, S. Nutrition research methodologies. Hoboken, NJ: Wiley Blackwell, 2015.

FOOD PROCESSING AND QUALITY CONTROL

COURSE OUTLINE

Responsible: Vasileios Raikos

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 Processing and Quality Control		

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) — Spring Semester
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.	**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 Coultate (4TH Edition), Royal Society of Chemistry

NUTRITIONAL SUPPLEMENTS AND SUPPLEMENTARY MEDICINE

COURSE OUTLINE

Responsible: Georgios Fragkiadakis

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	0809.8.001.0	**SEMESTER**	Winter/Spring
COURSE TITLE	Nutritional Supplements and Supplementary Medicine		

INDEPENDENT TEACHING ACTIVITIES if credits are awarded for separate components of the course	**WEEKLY TEACHING HOURS**	**CREDITS**
	0	2
Total	**0**	**2**

COURSE TYPE general background, special background, specialised general knowledge, skills development	Special background
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Both Winter and Spring Semesters
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/NDS164/

2. LEARNING OUTCOMES

Learning outcomes

Food supplements are defined as foods intended to supplement the normal diet, which are concentrated sources of nutrients or other substances with nutritional or physiological effects, individually or in combination, and which are marketed in dosage forms, i.e. presentation forms such as capsules, lozenges, tablets, pills and other similar forms as well as sachets of powder, ampoules of liquid product, dropper vials and other similar forms of liquids and powders intended to be taken in pre-measured small unit quantities. They are preparations that are taken orally (per os) mainly and more rarely intravenously and contain substances that are missing from the normal diet or are contained in it in quantities that are considered insufficient. The intake of food supplements by people of all ages has increased dramatically in recent decades on a global scale. In Greece, too, dietary supplements constitute a growing and "modern" industry with a large number of supporters. However, both the underlying factors that push for intake and the beliefs about supplements have not been adequately examined. After attending the course, the student will have acquired the skills to handle the following issues: 1) What is defined as a dietary supplement? 2) How safe can it be considered to take? 3) What is its quality? 4) How representative are the nutritional claims on each label? 5) Is there scientifically documented evidence for the benefits of these preparations?

General Competences

The course contributes to the development of skills such as:

Search, analysis and synthesis of data and information, using the necessary technologies

Independent work

Knowledge of basic market data and development economics.

Promotion of critical, creative and inductive thinking

3. SYLLABUS

Vitamin A supplements

Vitamin D supplements

Vitamin E supplements

Vitamin K supplements

Vitamin B1 supplements

Vitamin B2 supplements

Vitamin B3 supplements

Vitamin B6 supplements

Vitamin B12 supplements

Vitamin C supplements

Magnesium supplements

Iron, copper, zinc supplements

Amino acid, peptide and protein supplements

Ω-3 fatty acid supplements

4. TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face to face, Distance learning, etc
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	Use of information technology in teaching and communication. Information via Web platform Use of ICT in Teaching, in education (e-class), communication with students Laboratory Training, in Communication via e-mail and e-class. with students
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** / **Semester workload** ESSAYS / 12 **Course total** / **12**
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	Formative or Summative exam, Multiple Choice Test, Short Questions (progress, 50%) with short answer questions, Essay Development Questions, answer and extended answer exercises Problem Solving, Written Assignment, Report / Report, Oral Examination, - Written or oral final exam (50%)

5. ATTACHED BIBLIOGRAPHY

Guide to Nutritional Supplements

Academic Press

Editor: B Caballero

Language: English

Hardback ISBN: 9780123751096

eBook ISBN: 9780123756619

DEPARTMENT OF NUTRITION AND DIETETICS SCIENCES, HELLENIC MEDITERRANEAN UNIVERSITY

FOOD CHEMISTRY AND ANALYSIS

COURSE OUTLINE

Responsible: Aspasia Spyridaki

1. GENERAL			
SCHOOL	School of Health Sciences		
ACADEMIC UNIT	Department of Nutrition and Dietetics Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	ΥΔ3008	**SEMESTER**	1st
COURSE TITLE	Food Chemistry and Analysis		

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	
PREREQUISITE COURSES	None
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
OFFERED TO ERASMUS STUDENTS	Yes (in English) — Both Winter and Spring Semesters
COURSE WEBSITE (URL)	https://eclass.hmu.gr/courses/NDS269/

2. LEARNING OUTCOMES

Learning outcomes

Upon successful completion of the course, students will be able to:

- demonstrate advanced knowledge and understanding of the properties of the main food components;
- explain how the properties of food components affect food deterioration, preservation and changes occurring during processing;
- describe, interpret and evaluate analytical methods used for the determination of food components and interpret the results obtained;
- perform calculations related to food composition and evaluate the nutritional information provided on food labels;
- work independently and as part of a team, following established laboratory protocols.

General Competences

- Searching, analysing and synthesising data and information using appropriate technologies
- Generating new ideas
- Independent work
- Teamwork

3. SYLLABUS
Nutrients. Macronutrients and micronutrients in foods. Energy value of foods. Digestion and absorption of nutrients. Water in foods: water binding and water activity. Water activity and food deterioration. Vitamins and minerals in foods. Chelating agents. Carbohydrates: sugars, reducing sugars, monosaccharide derivatives, glycosides, oligosaccharides, homopolysaccharides, starch properties, resistant starch, heteropolysaccharides, dietary fibre, hydrocolloids, browning reactions and sweeteners. Dietary proteins: essential and non-essential amino acids, limiting amino acids, biological value of proteins, protein complementation and the effects of heat processing on protein quality. Edible fats and oils: thermal stability of oils, hydrolytic and oxidative rancidity, factors affecting the rate of oxidation, natural and synthetic antioxidants, analysis of oils, assessment of oxidative status, extraction and processing of oils, olive oil, seed oils, fish oils and margarines. Milk and dairy products, meat, fish, eggs, fruits and vegetables, cereals and legumes.

4. TEACHING and LEARNING METHODS - EVALUATION	
DELIVERY Face-to-face, Distance learning, etc.	Face-to-face teaching, including lectures, practical exercises and laboratory sessions.
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY Use of ICT in teaching, laboratory education, communication with students	
TEACHING METHODS The manner and methods of teaching are described in detail.	**Activity** | **Semester workload** **Course total** |
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure	

5. ATTACHED BIBLIOGRAPHY
Belitz, H.-D., Grosch, W., and Schieberle, P. *Food Chemistry*. Springer.

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