

G. ANNEXES

ANNEX 1 – LIST OF COMPULSORY COURSES AND ELECTIVE COURSES

All courses of the study program 'Dietetic and Nutrition' are compulsory

ANNEX 2 – COURSE DESCRIPTION

Course title	BIOLOGY				
Course code	ΔΚΔ101				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / A' semester				
Teacher's name	Dr. Artemis Elia				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is to acquaint the students with the basic principles of cell theory, the structure and function of the cell and subcellular organelles, the understanding of the basic metabolic pathways of cells, the acquaintance with the characteristics of the genetic material, the understanding of the effect of genetics and heredity in the occurrence of genetic diseases, understanding the mechanisms of evolution of organisms and familiarizing students with ecological issues/topics.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the basic principles of organization and operation of the cell, as well as the molecular mechanisms responsible for its operation. - Understands the basic mechanisms of genetic information flow, the roles of DNA, RNA and proteins as well as the various hereditary diseases that may be related to nutrition. - Understands the basic principles of ecology. - Understands the basic concepts of evolution, both at the level of population and biological diversity, and at the level of microorganisms, plants, fungi and animals. 				
Prerequisites	None	Required	None		
Course content	<p>Cell theory: Description of basic principles of cell theory</p> <p>Methods and techniques of cell study: photon, electron and electron scanning microscopy, staining, immunocytochemistry</p> <p>Biological macromolecules: Structure and function of proteins, nucleic acids, carbohydrates, lipids. The role of water and salts in cells.</p> <p>Prokaryotic and eukaryotic cell structure: Description of prokaryotic and eukaryotic cell</p>				

	<p>and their comparison</p> <p>Cellular organelles: Cell membrane (cell membrane functionality, cell membrane permeability), endoplasmic reticulum, ribosomes, Golgi system, mitochondria, lysosomes, peroxisomes, cell skeleton, centrosome, nucleus.</p> <p>Plant cell organelles: cell wall, chloroplasts, succulents, plant-animal cell differences</p> <p>Cell metabolism: Anabolism - catabolism, the role of ATP as the energy currency of the cell, enzymes and enzymatic action, photosynthesis (light - dark reactions), stages of cell respiration (glycolysis, citric acid cycle, oxidative phosphorylation), degradation relationships of fats, proteins and sugars</p> <p>Genetic material: Gene definition, structure and importance of chromosomes, properties of genetic material.</p> <p>Origin of life: origin of the cell</p> <p>Evolution of organisms: Darwinian theory of the evolution of organisms, contemporary views on the evolution of organisms, factors of evolution of organisms</p> <p>Basic concepts of Ecology: Ecosystem, biotic - abiotic factors, producers, ecosystem productivity, consumers, food chains, decomposers, the role of fertilizers, the cycle of carbon dioxide in an ecosystem, energy flow in an ecosystem and ecosystem, population and ecosystem societies.</p> <p>Terrestrial and aquatic ecosystems: general characteristics, photosynthesis and availability of oxygen in the aquatic environment, water and terrestrial organisms.</p> <p>Human interventions in the ecosystem: soil pollution, water pollution, air pollution</p> <p>Measures to avoid, remove and reduce environmental burdens: Environmental protection. Environmental measures.</p> <p>The laboratory part of the course includes the specific exercises:</p> <p>I. Nitrogen base complementarity exercises</p> <p>II. Exercises on cellular respiration</p> <p>III. Basic techniques for studying the cell, Microscopes and Microscopy.</p>
<p>Teaching methodology</p>	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.</p> <p>The laboratory of the Biology course takes place in the Biochemistry laboratory.</p>
<p>Bibliography</p>	<ol style="list-style-type: none"> 1. Βασικές Αρχές Κυτταρικής Βιολογίας, ΑΝΑΓΝΟΥ-ΚΣΥ, Π.Χ. Πασχαλίδης 2. Συνοπτική Κυτταρική Βιολογία, ΑΙΚ. ΧΑΡΒΑΛΟΥ, Π.Χ. Πασχαλίδης 3. Κυτταρική Βιολογία, Λ.Χ. Μαργαρίτης, ΙΩΝ 4. Βιολογία, Τ. Χαραλάμπους, Εκδόσεις Αλωνεύτης 5. Goffrey M. Cooper & Robert E. Hausman. (2021). Το Κύτταρο: Μια Μοριακή Προσέγγιση. ΕΠΙΤΟΜΗ ΕΚΔΟΣΗ. Ακαδημαϊκές Εκδόσεις Ι. Μπάσδρα & ΣΙΑ Ο.Ε. Αλεξανδρούπολη. ISBN: 978-618-5135-20-1, Κωδικός ΕΥΔΟΞΟΣ: 102123643

	6. Alberts et al. (2018). Μοριακή Βιολογία του κυττάρου. Εκδόσεις Υτορία, Αθήνα. ISBN: 978-618-5173-29-6, Κωδικός ΕΥΔΟΞΟΣ: 68401319
Assessment	- Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	INORGANIC AND ORGANIC CHEMISTRY				
Course code	ΔΚΔ102				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / A' semester				
Teacher's name	Dr. Nikolaos Arampatzis				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The teaching of the course aims to acquire basic knowledge in fundamental concepts of Inorganic and Organic Chemistry, so that they can be applied in courses of the following semesters and to familiarize the student with the chemical laboratory and basic chemical techniques. It also aims to study carbon compounds, many of which are found in food and participate in the functions of living organisms, the nomenclature of the main classes of organic chemistry and the study of the main compounds that will be used in further courses.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows basic knowledge of chemistry such as: the types of chemical reactions, the types of chemical bonds and their effect on the physicochemical properties of inorganic and organic chemical compounds. - Knows the structure, properties and applications of the main biomolecules, such as fats, proteins, carbohydrates, which are structural and energy components of food. - Understands the usefulness of organic compounds in nutrition as well as their participation in the most important functions of the body. - Knows basic laboratory techniques such as the preparation of solutions and stoichiometric calculations, weighing, titration, recrystallization, vacuum filtration, centrifugation, extraction as well as the basic laboratory utensils and devices of a chemical laboratory. 				
Prerequisites	None	Required	None		

<p>Course content</p>	<p>Chemical formulas and nomenclature Structure of the atom Periodic table of the elements - Periodic properties of the elements Chemical Bonding : Ionic Bonding, Covalent Bonding, Hydrogen Bonding, Van der Waals Forces, Metallic Bonding Gas, liquid and solid state of matter Solutions – Concentration Chemical balance Acids, bases, salts Aqueous solutions of electrolytes - the pH. Introduction to Organic Chemistry and a simple reference to its history. Development of Chemical Bond Theory. Hybridization of the Carbon Atom. Classification of organic compounds and biomolecules according to their functional group group. Nomenclature of Organic Compounds (IUPAC Rule). Design of organic structures. Overview of Organic Reactions. Physical and Chemical Properties of Organic Compounds: Hydrocarbons - Alkanes - Alkenes - Alkynes - Benzene - Aromatic compounds - Alcohols - Carbonyl compounds - Carboxylic acids - Amines - Carbohydrates - Sugars - Fat The laboratory part of the course includes: Introduction and acquaintance with the chemical laboratory. Basic safety principles – familiarity with basic chemical utensils. Properties of chemical bonds – Solubility. Determination of physical quantities – Density. Methods of separation of mixtures. Preparation of solutions. Study of properties of solutions. Properties of acids – Measurement of pH – Use of indicators. Neutralization titration. Electrolytes. Isolation techniques of organic compounds – Distillation – Extraction. Physical and chemical properties of organic compounds - Hydrocarbons - Alcohols - Carbonyl - Carboxylic acids. Qualitative determination of organic compounds – Melting point. Determination of the structure of organic compounds – Infrared Spectroscopy (IR) – Nuclear Magnetic Resonance Spectroscopy (NMR) – Mass Spectroscopy. Writing a lab report</p>
<p>Teaching methodology</p>	<p>The theoretical part is done in power point and audiovisual media. Images are provided to students when and where needed for further understanding of key concepts. Student participation is considered essential.</p> <p>The laboratory part of the course takes place in the Biochemistry laboratory. Up to 10 students enter the laboratory each time, who are divided into 5 groups of 2 people each. Each group works on its own bench with its own tap, having at its disposal the glassware and the reagents it needs, under the supervision of the responsible professor. All groups work on the same topic according to the teacher's instructions. The laboratory is modern and fully equipped and meets all safety standards. Each student has his own space where he stores his own glassware. There is a separate storage area for the reagents used in the experiments. Finally, the laboratory is equipped with a teaching board and thus it is possible to use it as a classroom.</p>
<p>Bibliography</p>	<p>1. Οργανική χημεία. Τόμος 1 και 2, MCMURRY John., Πανεπιστημιακές Εκδόσεις</p>

	<p>Κρήτης, 2000.</p> <p>2. Μανουσάκης Γ., (2015) Γενική και Ανόργανη Χημεία, Εκδόσεις Α. Κυριακίδη. Physical Chemistry 2nd Edition, Clyde R. Mertz, Mc Graw Hill</p> <p>3. Εφαρμοσμένη Ανόργανη Χημεία, Σ. Λιοδάκης</p> <p>4. Οργανική Χημεία (Α και Β τόμος), Morrison and Boyd</p> <p>5. Οργανική Χημεία, G.A Taylor, Ιατρικές Εκδόσεις Λίτσας</p>
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	BASIC PRINCIPLES OF NUTRITION AND DIETETICS				
Course code	ΔΚΔ103				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / A' semester				
Teacher's name	Mikaella Nikolaou				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	<p>The aim of the course is to give students the first supplies and the first knowledge in relation to the science of Nutrition and Dietetics, nutrients and their biological role, dietary sources of nutrients as well as the parameters that affect the requirements in macro and micro nutrients. In addition, it aims to provide the basic knowledge of nutritional requirements, as well as the basic principles of designing a nutrition plan based on dietary recommendations and the evaluation of the nutritional value of foods.</p>				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows nutrients and their functions in the human body. - Understands the concept of nutritional requirements as well as the basic principles applied in formulating recommended dietary intakes. - Calculates the energy requirements of a person and applies the basic steps for writing up a nutrition plan, with an emphasis on the Mediterranean diet. - Understands the factors that can directly affect a person's eating behaviour. 				
Prerequisites	None	Required	None		

<p>Course content</p>	<p>Basic principles of Nutrition Science and Dietetics. Factors that affect the human diet (social, religious, economic, cultural).</p> <p>Human body composition: weight, fat free body mass, total body fat, muscle mass, water composition, visceral fat, ideal body weight.</p> <p>Macro nutrients and their role. Fats: usefulness, distribution in the diet, deficiency, adverse effects, olive oil and diseases. Carbohydrates: classification, sources, utilities, harmful effects, avoidance of excessive sugar. Fiber, cholesterol: positive and negative effects. Proteins: amino acids, biological value of proteins, requirements, excessive intake.</p> <p>Micro nutrients and their role: Vitamins and Minerals: Fat-soluble, Water-soluble vitamins, minerals. What is the enrichment of food with micro nutrients.</p> <p>Foods groups and their nutritional value: milk, eggs, meat, fish, bread, vegetables, fruits, legumes, alcohol. Nutritional value of meals: meals per day, breakfast, consumption of food between meals. Food equivalents. Basic principles of diet planning. Methods of calculating dietary intake. Calculation of resting metabolism. Calculation of daily energy needs.</p> <p>Origin of nutrients and correlation of nutritional requirements of the individual with food intake. Recommended intake of essential nutrients.</p> <p>Evidence from epidemiological-demographic surveys related to nutritional issues (relative): death from heart disease in various countries in relation to diet, death from cancer in relation to diet, obesity, diabetes mellitus, hyperlipidemia as a risk factor for coronary heart disease, stroke and morbidity etc.</p> <p>Global organizations dealing with nutrition (related): FAO, WHO, what are they and what is their role in the international community.</p> <p>Maintaining health with a healthy diet: Balanced diet. Diet instructions. Food Guide Pyramid (Healthy Eating Pyramid). Basic guidelines for healthy eating and prevention of chronic diseases.</p> <p>Pyramid of the Mediterranean Diet: Basis of the Mediterranean Diet.</p>
<p>Teaching methodology</p>	<p>The theory will be taught through Power Point but also through discussions that will be developed during the course. Time is given for any questions and queries about the course.</p>
<p>Bibliography</p>	<ol style="list-style-type: none"> 1. Διαιτολογία, Μ. C. Moore, 3η έκδοση, εκδόσεις βήτα 2. Gibney MJ, Vorster HH, Kok FJ. Εισαγωγή στη Διατροφή του Ανθρώπου (Επιμ. μετάφρασης: Α-Λ Ματάλα και Μ. Γιαννακούλια). Αθήνα, Εκδ. Παρισιάνου, 2015. 3. Υγιεινή Διατροφή και Διαιτητική 1, C.E. Townsend, 7^η έκδοση, εκδόσεις ΙΩΝ 4. Σωστή Διατροφή και Υγεία, Ρ. Π. Παπαλαμπριανού, Λ.Κ. Αναστασιάδης 5. Human Nutrition (2017). Catherine Geissler, Hilary Powers. OUP Oxford. 978-0198768029
<p>Assessment</p>	<p>- Final examination: 60%</p>

	- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	ENGLISH TERMINOLOGY			
Course code	ΔΚΔ104			
Course type	Compulsory			
Level	Undergraduate			
Year / Semester	1 year / A' semester			
Teacher's name	Souzana Psara			
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week -
Course purpose and objectives	The course aims to familiarize students with English terminology in the subjects of Dietetics and Nutrition by treating selected topics from the international literature. In addition, it aims to develop skills in reading and writing assignments and research papers.			
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Understands and uses English terminology and a range of vocabulary related to Dietetics and Nutrition. - Uses the English Language both as a means of communication with clients and in monitoring foreign language literature. - Responds to audio material - Writes texts, papers, etc. in the English language 			
Prerequisites	None	Required	None	
Course content	<p>Acquisition of knowledge in basic and necessary functions of the foreign language:</p> <p>Reading: Comprehending selected topics from the international literature on Health sciences and Dietetics / Nutrition. Vocabulary related to Dietetics / Nutrition on which exercises and texts will be based. Text analysis and specific questions to understand each text. Vocabulary exercises based each time on the new vocabulary.</p> <p>Writing: Students are taught through writing process, sentence and paragraph structure. Write short essays related in the fields of Dietetics / Nutrition.</p> <p>Grammar: Basic grammatical structures. Present, past and future tenses; personal, objective and possessive pronouns; countable/uncountable nouns; adjectives; adverbs; conjunctions.</p>			

	<p>Listening: Audio comprehension, production and development with conceptual coherence, texts in written and spoken language, response to everyday situations with linguistic or non-linguistic means. Comprehend selected topics from the international literature on Dietetics / Nutrition.</p> <p>Speaking: Speaking skills are developed using a variety of oral exercises in fields related to Dietetics / Nutrition.</p>
Teaching methodology	The course will be conducted using audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher. Comprehension exercises will also be used.
Bibliography	<ol style="list-style-type: none"> 1. Mastering Speaking and Listening, John Murphy with Anne Louise Woods, Burlington Books 2. Mastering Writing, Anna Johnson with Georgia Graham, Burlington Books 3. Ken Paterson, Grammar Spectrum I – Elementary, Oxford University Press. 4. Modern English Grammar, C and P Grivas, Efstathiades Group 5. Andrian Doff and Christopher Jones, Language in Use for Beginners, coursebook and workbook, Oxford University Press.
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	English

Course title	BIOINFORMATICS				
Course code	ΔΚΔ105				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / A' semester				
Teacher's name	Dr. Demetrios Ktistakis				
ECTS	6	Lectures / week	1 (1 hour)	Laboratories / week	1 (2 hours)
Course purpose and objectives	The aim of the course is the digital training of the students. Familiarizing students with the use of computers and mobile/digital devices, data recording and storage, communication networks and social networks. Students should be able to keep their client's records electronically and refer to the internet for information and further				

	literature review.		
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Identify key concepts and describe key features of information and communication technologies. - Demonstrate ability to use and configure a modern, widely used personal computer operating system. - Use web browsing software to search for information on the Internet, use e-mail to send and receive e-mails. - Create and edit text processing files (Microsoft Office Word), spread sheet files (Microsoft Office Excel), presentation software for preparing and formatting a presentation (Microsoft Office, Power Point), adding multimedia and graphic content to it. 		
Prerequisites	None	Required	None
Course content	<p>Types and mode of operation of computers and electronic devices.</p> <p>Identification of user needs and equipment selection criteria Management of peripheral devices. Manage directories and files.</p> <p>Use of ready-made software packages.</p> <p>Navigation-management of basic internet services.</p> <p>Information retrieval and management.</p> <p>Basic principles of management information systems and retrieval of medical information.</p> <p>Health Information Systems - Protection and security in health information systems.</p> <p>The laboratory part of the course includes:</p> <p>Windows: Organizing - File Management, Basic Principles of a Windows Environment, Creating and Managing Files, Network Functions.</p> <p>Browsing the Internet, searching for information, Creating e-mail, sending messages.</p> <p>Introduction to basic IT software (e.g Office tools) and presentation of their features.</p> <p>Create and edit text documents (MS Word). Work with tabs, recesses, margins, pages. Use of correction tools, tables. Document management and printing. Examples of word processing application in Health Sciences.</p> <p>Create and edit sheets (MS Excel). Basic operating principles, creating tables and graphs, functions and computing tools. Examples of application of spread sheets in Health Sciences (creation of a client/patient file).</p> <p>Create and edit text and images in MS Power Point.</p>		
Teaching methodology	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.</p> <p>The course takes place in the Informatics laboratory for the practical practice of</p>		

	theoretical data in Computers.
Bibliography	<ol style="list-style-type: none"> 1. Εισαγωγή στην Πληροφορική, Κωνσταντίνος Τρεμπέλης, Πανεπιστήμιο Ιωαννίνων 2. ECDL, Χρίστος Χρίστου 3. Computer – Networking, James F. Kurkose e.t.c., Pearson 4. Εισαγωγή στην Τεχνολογία των Ηλεκτρονικών Υπολογιστών Ε.Τ.Τ. Βιβλιοθήκη πληροφορικής. Εκδόσεις Ιων. 5. Computer Science Illuminated, Nell Dali – Jone Lewis 6. Η πρακτική των υπολογιστών Βήμα-Βήμα Ε.Τ.Ε. Βιβλιοθήκη πληροφορικής. Εκδόσεις Ιων.
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	INTRODUCTION TO MICROBIOLOGY				
Course code	ΔΚΔ201				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / B' semester				
Teacher's name	Dr. Artemis Elia				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is the students to acquire the basic knowledge about the biology of microbial cells (shape, structure, genetic material) and at the same time to familiarize themselves with the techniques of growth and control of microorganisms. To acquire the ability to safely handle microbial cultures, to be able to estimate the microbial load contained in a sample and to be able to make a first estimate of the types of microorganisms contained in it.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Recognizes and classifies Bacteria, Viruses, Fungi, and Parasites. - Describes the various growth requirements of microorganisms. - Knows the different methods of micro-organism control, basic micro-organism cultivation techniques in the laboratory. - Understands the importance of the microbiome in the health of the body. 				

Prerequisites	None	Required	None
Course content	<p>Microorganisms of microbiology (fungi, yeasts, bacteria-morphological), their cultivating, physiological and biochemical characteristics, reproduction</p> <p>Nutrition of microbes: Their food types and effect of physicochemical factors on the growth and activities of microbes (temperature, pH, radiation, pressure)</p> <p>Growth of single-celled microorganisms and its parameters (number of divisions, generation time, growth rate, age of bacteria, curve and growth phases)</p> <p>Microbial ecology. Microbial systems for the management and utilization of natural resources, organic by-products, waste and scrap.</p> <p>Microbiome - relationship between germs and humans</p> <p>Laboratory exercises:</p> <p>Microscopic observation with the use of microbiological stains and in the measurement of the microbial load.</p> <p>Microbiological cultures - Methodologies</p> <p>Effect of physical (heating, UV) and chemical agents (antibiotics) on limiting microbial growth</p>		
Teaching methodology	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.</p> <p>The laboratory part of the course takes place in the Biochemistry laboratory where laboratory exercises are conducted.</p>		
Bibliography	<ol style="list-style-type: none"> 1. Μικροβιολογία, Στέφανος Κολιαής, University Studio Press. 2. Ασκήσεις Μικροβιολογίας, Στέφανος Κολιαής, University Studio Press 3. Microbiology Immunology and Infections Diseases, Gabrielle Vivella, Lippincott Williams and Wilkins 4. Microbiology and Immunology, Γεώργιος Μπατλόπουλος, Lippincott – Raven 5. Ιατρική Μικροβιολογία, Δρ. Χρυσάνθη Παπαδοπούλου, Εκδόσεις ΓΡ Παρισιάνος 		
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>		
Language	Greek/English		

Course title	FOOD SCIENCE AND TECHNOLOGY
Course code	ΔΚΔ202
Course type	Compulsory

Level	Undergraduate				
Year / Semester	1 year / B' semester				
Teacher's name	Dr. Maria Kyriacou				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The aim of the course is to understand the composition and spoilage of plant and animal foods and the causes of these spoilages. Analysis of the most important food processing methods, which are also preservation methods. An additional goal is to understand the effects of processing methods, as well as packaging, on the nutritional value and quality of foods.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Understands the composition of animal and vegetable foods - Knows the causes that cause food spoilage - Knows the most important food processing methods and preservation methods. - Understands the effect of processing methods and packaging on food quality. 				
Prerequisites	None	Required	None		
Course content	<ul style="list-style-type: none"> - Animal and plant foods. - Food ingredients (sugars, proteins, lipids, water, vitamins, and minerals, natural pigments, toxic compounds, odor and taste substances and substances that cause food intolerance, allergens). - Food groups (Fruits and Vegetables, Milk, Legumes, Cereals, Nuts, Eggs, Meat and Fish, Effervescent, Flavoring). - Causes of food spoilage (natural, chemical, biological). - Possible alterations of nutrients as well as food groups and the consequences of these alterations. - Methods of food processing and preservation (dehydration, low temperatures, use of high temperatures, fermentation, irradiation, addition of substances, special processing methods, new technologies). - Effect of preservation methods on food quality. - Food packaging. Packaging materials and interactions with food. Developments in food packaging. 				
Teaching methodology	The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.				
Bibliography	<ol style="list-style-type: none"> 1. Κυρανάς, Ε. (2011) Τρόφιμα. Σύσταση, προέλευση, αλλοιώσεις, επεξεργασία & συσκευασία. Εκδ. Τζιόλα, Θεσσαλονίκη. 2. Fellows PJ (2009) Food processing technology: Principles and practice. 3rd ed. 				

	<p>Woodhead Publ., USA.</p> <p>3. Forsythe SJ (2010) Food Hygiene, Microbiology and HACCP. Aspen Publishers, Inc.</p> <p>4. Rijk R and Veraart R (2010) Global Legislation for Food Packaging Materials. Wiley-VCH Verlag GmbH & Co. KGaA, Germany.</p> <p>5. Taoukis, P. and Oreopoulou, B., 2019. Science and Technology of Foods.</p>
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	FOOD CHEMISTRY				
Course code	ΔΚΔ203				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / B' semester				
Teacher's name	Dr. Maria Kyriacou				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	<p>The aim of this course is to understand the properties and composition of food as well as the chemical reactions that take place during the processing, storage and cooking of food, to become familiar with the appropriate methods of food analysis for the verification of identity (adulteration) or their quality as well as the knowledge of the conditions that may lead to the development of desirable or undesirable changes in food.</p>				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the basic principles of the chemistry of food components (proteins, lipids, carbohydrates, water and inorganic components, vitamins, enzymes, phenolic components, acids, alcohols, pigments, aroma-flavor compounds, additives), properties and nutritional values of foods and their effect on human health. - Knows the chemistry of various foods (milk, cereals, fruits and vegetables, meat, eggs, fats and oils, sweeteners, alcoholic beverages, effervescent and soft drinks, flavorings, water), food additives and unacceptable ingredients. - Knows the changes that occur during food preservation, food processing and the various changes in food components during this process. - Knows the basic principles of food biotechnology and the problems arising from 				

	it as well as new eating habits.		
Prerequisites	None	Required	None
Course content	<p>Introduction to the Concepts of Nutrition and Nutritional Value.</p> <p>The Importance of Water as Raw Material but also as Food.</p> <p>Inorganic Ingredients, Vitamins and Fortified Foods.</p> <p>Fats: Digestion and Metabolism.</p> <p>Proteins and Carbohydrates.</p> <p>Functional foods.</p> <p>The types of chemical reactions and their importance in nutrition.</p> <p>Dyes and Aromatic Compounds.</p> <p>The Taste and the Aroma.</p> <p>Food Additives in the Food Industry.</p> <p>Fats: Structures and their Chemical Properties</p> <p>Unwanted Ingredients and Food Safety</p> <p>Food Preservation and how it affects the Nutritional Value of Food.</p> <p>Food packaging</p> <p>Food Biotechnology: From Genetically Modified Foods to Cloning Nucleic Acids.</p> <p>Laboratory Part of the Course</p> <p>It includes the qualitative and quantitative determination of the nutrients of food as well as the study of chemical reactions of unwanted ingredients that degrade the quality of food.</p>		
Teaching methodology	<p>The course will be conducted using audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.</p> <p>The laboratory part of the course takes place in the Biochemistry laboratory. Each group works on its own bench, having at its disposal the glassware and the reagents it needs, under the supervision of the responsible professor. All groups work on the same topic according to the teacher's instructions. The laboratory is modern and fully equipped and full of all safety standards.</p>		
Bibliography	<ol style="list-style-type: none"> 1. Χημεία Τροφίμων, Δ. Μπόσκου, Εκδόσεις Γαρταγάνη 2010, Θεσσαλονίκη. 2. Principles of Food Chemistry (2018). deMan, J.M., Finley, J., Hurst, W.J., Lee, C. 3. Food Chemistry, H.D. Belitz, W. Grosch, P. Schieberle, Μετάφραση στα Ελληνικά: Μ. Παπαγεωργίου, Α.Ι. Βάρναλη, Επιστ. Επιμέλεια Σ.Ν. Ραφαηλίδης, Εκδόσεις Τζιόλα, 2012, Θεσσαλονίκη. 4. CRC Handbook of Nutrition and Food, C.D. Berdaniev, Editorial Board C.D. Bertaniev et al., CRC Press, 2013, Boca Raton, FL. 5. Nutrition, A. Galperin, Chelsea House Publishers, 2012, USA. 		

Assessment	- Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	SOCIOLOGY, PSYCHOLOGY AND NUTRITION				
Course code	ΔΚΔ204				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	1 year / B' semester				
Teacher's name	Dr. Maria Jacovides				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	Informing the students about Sociology. Maximum understanding of Social and economic conditions in the occurrence of eating problems. Recognizing the importance of relationships between social factors and health and nutrition characteristics of specific social groups.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Know the subject of study of sociology and social psychology and their basic concepts and topics - Know the ways in which social psychology and sociology can help our lives - Be able to understand the processes through which we organize and use social information - Be able to understand how social behaviour can directly affect an individual's nutritional and dietary behaviour 				
Prerequisites	None	Required	None		
Course content	<p>Introduction to Sociology: The Relationship between Sociology and Dietetics and Nutrition. Historical background. Why is the study of Sociology necessary.</p> <p>Basic sociological terms: The Social group. Social classes, social strata. The problem of social inequality. Socialization of Dietetics. Public opinion. Social rules. The Social role.</p> <p>Social conditions of the evolution of Dietetics. Civilization. Education - Culture - Health. The problem of freedom.</p> <p>Social epidemiology: Introductory. The development of social epidemiology. Social</p>				

	<p>complexity. Methodological problems of social epidemiology.</p> <p>Society, health and diet: Basic concepts. Psychological and social approach. People's attitude towards diet and the factors that affect it.</p> <p>Financial data and social institutions regarding the visit to a Dietitian. Social complexity and diet. Interpretation of epidemiological data.</p> <p>The patient: Introduction. The functional approach to divergence. The problem of nutrition as a role. The relationship between the roles of the patient and the dietitian. The role of the patient and the behavior of the Dietitian. Dietetics as an institution of social control. Consequences of the implementation of the patient's role. Criticism of the patient's attitude</p> <p>The Dietitian: Dietetics as a profession. The socialization of the Dietitian. The sociological approach to the factors that influence dietary choices.</p>
Teaching methodology	The course will be conducted using power point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.
Bibliography	<ol style="list-style-type: none"> 1. Κοινωνική Ψυχολογία: Εισαγωγή στη μελέτη της κοινωνικής συμπεριφοράς. Κοκκινάκη, Φ. Αθήνα: Εκδόσεις Τυπωθήτω. 2005 2. Taylor, S.E. (2017). Health Psychology, 10th Edition, McGraw Hill. 3. Κοινωνική Ψυχολογία (επιμέλεια: Μαύρος, Κ.). Lipra, R. A. Αθήνα: Εκδόσεις Έλλην, 2003 4. Introduction to Logic 13th Edition, Irving M. Copi, Carl Cohen, Pearson International Edition 5. Σύγχρονη Κοινωνιολογική Θεωρία (Τόμοι II και III), Γ. Μπαρουξής, Παπαζήσης
Assessment	<p>Final examination: 60%</p> <p>Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	MOLECULAR BIOLOGY AND GENETICS
Course code	ΔΚΔ205
Course type	Compulsory
Level	Undergraduate
Year / Semester	1 year / B' semester
Teacher's name	Dr. Artemis Elia

ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is to understand the basic principles of molecular biology and genetics. The study of the properties of the genetic material and the ways of its transmission. Understanding how genetic information is expressed. Understanding the importance of genetic diversity and the link between genes and diseases.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the structure and role of the genome. - Understands the expression of encoded genetic information. - Understands the interaction of genetic material with various environmental factors, including nutrition, in the expression of genetic information. - Understands the connection between genes and diseases and the mode of inheritance. 				
Prerequisites	Biology	Required	None		
Course content	<p>Introduction to Molecular Biology and Genetics: Definitions, Historical Background</p> <p>Heredity and genetics: Introduction to the concepts of heredity and genetics, multiplication - reproduction - fertilization</p> <p>The DNA molecule: double helix model, structure, properties and function, DNA aggregation (histones - non-histones, heterochromatin, euchromatin, nucleosomes)</p> <p>The RNA molecule: structure, forms, functionality</p> <p>Types of cell division: Mitosis, reduction</p> <p>Genetic material: Genes, chromosomes (structure - form), genetic material properties, chromosome categories (autosomal - sex-linked inheritance, gene categories (sex-linked, sex-free, sex-restricted,</p> <p>Mechanisms of genetic material transfer: Mendelism, Mendel's laws and their explanation</p> <p>Mutations: Types of mutations (gene mutations, chromosomal abnormalities), chiasmotype</p> <p>Genetic information at the molecular level: ways of expressing genetic information, a basic doctrine of biology</p> <p>Copy - transcription: description of the first stages of expression of genetic information, differences - similarities</p> <p>Expression of genetic information: the three types of RNA, a process of protein synthesis</p> <p>Molecular biology research techniques: Expression, cloning, Polymerase chain reaction (PCR), Gel electrophoresis, Southern blotting, Northern blotting, Western blotting.</p> <p>Exercises: Molecular biology and genetics exercises, methods of studying, isolating and separating DNA</p>				
Teaching methodology	The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the				

	basic concepts of each course.
Bibliography	<ol style="list-style-type: none"> 1. Μοριακή Γενετική του Ανθρώπου, Γεώργιος Δεδούσης, 2021, ΥΤΟΡΙΑ ΕΚΔΟΣΕΙΣ Μ. ΕΠΕ. 2. Molecular Biology of the Cell, Bruce Aler, Garland Science 3. Γονιδιακή ρύθμιση και ειδικά θέματα Μοριακής Βιολογίας, Θ. Τζαβάρας, Πανεπιστήμιο Ιωαννίνων 4. Molecular Biology of the Cell 5th edition, Alberts, Johnson, Lewis, Raff, Walter, Garland Science 5. Κυτταρική και Μοριακή Βιολογία (τόμοι ενότητα 1η και 2η), Γ. Παγουλάτος, Πανεπιστήμιο Ιωαννίνων 6. Molecular Biology, Robert F. Weaver, The McGraw-Hill Companies (2007)
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	HUMAN ANATOMY AND PHYSIOLOGY I				
Course code	ΔΚΔ301				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	2 year / C' semester				
Teacher's name	Dr. Vaso Stylianou				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is to learn how the systems of the human body work and how they work together for homeostasis. Knowledge of basic concepts and terminology related to the anatomy and physiology of the skeletal, muscular, nervous, hematopoietic and immune systems, as well as the special senses.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the structure of the human body and can describe its organization in individual functional systems. - Understands the basic physiological mechanisms that take place in humans at all levels. 				

	<ul style="list-style-type: none"> - Understands the importance of maintaining homeostatic mechanisms for human health and to recognize the factors that contribute to the manifestation of diseases. - Knows the necessary knowledge about physiological functions, such as the transmission of nerve impulses. 		
Prerequisites	Biology	Required	None
Course content	<p>Fundamental concepts of human anatomy and physiology</p> <p>Homeostatic mechanisms and cellular communication: homeostatic control systems, mechanisms of control of cellular function through chemical molecules</p> <p>Support system: anatomical elements, composition, construction, study of the skeleton</p> <p>Arthology-Connection: anatomical elements, division of joints, movements, study of main joints</p> <p>Muscular System: anatomical elements, properties, linear, smooth, myocardial muscles, description of the function of the muscular system. Muscle contraction, muscle tone, muscle fatigue</p> <p>Nervous System: anatomical elements, nerve cells, membrane potentials, synapses and neurotransmitters: treatment and transmission of nerve signals - Structure and function of the Nervous System</p> <p>Sensory organs: eye, ear, nose, tongue, skin</p> <p>Hematopoietic system: Blood composition and function - Hematopoiesis, hemostasis and blood clotting</p> <p>Immunology data: Physical and acquired immunity, cellular and humoral immunity, antigens, antibodies.</p> <p>The laboratory part of the course includes:</p> <p>Basic techniques for studying the cell.</p> <p>Interactive exercises in programs that simulate the functions of various systems in the human body (nervous, muscular, etc.).</p> <p>Student presentations in relation to the content of the course in order to fully understand it.</p> <p>Analysis of blood tests.</p>		
Teaching methodology	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. There is also a presentation of human systems in a special educational doll and their promotion in special software program diagrams.</p>		
Bibliography	<ol style="list-style-type: none"> 1. Ανατομία και Φυσιολογία του Ανθρώπινου Σώματος, Lucille Keir etc, Εκδόσεις ΕΛΛΗΝ 2. Βασικές Αρχές Ανατομίας, Στέφανος Π. Λαζαρίδης, Εκδόσεις ΕΛΛΗΝ 3. Ανατομία- Φυσιολογία, Κατρίτση- Κελέκη, Ίδρυμα Ευγενίδου 4. Ιατρική Φυσιολογία, Τόμος Α'+Β'+Γ', Συγτον, Εκδόσεις Γ. Παρισιανός 		

	5. Φυσιολογία του Ανθρώπου, Ν. Σοφιάδης Gabriel A. Khasabov, University Studio Press
Assessment	- Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	BIOCHEMISTRY & METABOLISM I				
Course code	ΔΚΔ302				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	2 year / C' semester				
Teacher's name	Dr. Artemis Elia				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is to understand the characteristics and basic properties of biological molecules, their role in the functioning of life and their importance as components of the nutrition of all living organisms. In addition, the knowledge to understand digestion, absorption, bioavailability, various mechanisms of metabolism and the effect of nutrient metabolism on body function.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the structure, nomenclature and chemical properties of biomolecules. - Understands how biomolecules affect key processes. - Knows methods of detection, separation and quantification of biomolecules. - Knows the biochemical processes involved in the metabolism of food nutrients. 				
Prerequisites	Inorganic and Organic Chemistry	Required	None		
Course content	<p>Introduction to Biochemistry. Relationship between Biochemistry and Nutrition.</p> <p>Reference to the most remarkable characteristics of the simple molecules that take part in the functions of the cell (water, carbohydrates, fats).</p> <p>Amino acids: Chemical composition, types of amino acids, separation of amino acids.</p> <p>Peptides-proteins: Protein structure, examples of proteins with important biological role such as collagen, elastin, keratins, lysozyme, immunoglobulins, myoglobin, hemoglobin, muscle proteins, general principles of protein structure, primary, secondary, tertiary,</p>				

	<p>quaternary protein structure.</p> <p>Enzymes: Enzyme specificity, activity regulation, classification-nomenclature, mechanisms of action - Coenzymes: Classification, structure, mode of action.</p> <p>Carbohydrates: Monosaccharides, oligosaccharides, polysaccharides, homopolysaccharides, cell wall heteropolysaccharides, glycoproteins, proteoglycans.</p> <p>Lipids: Classification and structure, simple and complex lipids, Transport Lipoproteins.</p> <p>Biological membranes: membrane components and structure, membrane receptors, permeability and active transport.</p> <p>Nucleic acids: Bases, nucleosides, nucleotides, nucleotide biosynthesis, primary structure and nucleic acid arrangement, their role in protein biosynthesis.</p> <p>Vitamins. Distinction based on water solubility. Vitamins - provitamins - compounds with vitamin action. Loss of vitamins. Functions of vitamins.</p> <p>ATP, hormones: caloric value and performance ATP, hormones and hormonal regulation.</p> <p>Definition of Metabolism. Basic units of energy and metabolism. Energy balance of the individual. Methods of calculating energy intake, methods of calculating energy loss, methods of calculating basal metabolism.</p> <p>Basic metabolism, factors that affect it at rest, calculation of the basic metabolism, factors that affect the basic metabolism-age, body surface, sex, pregnancy, body composition, endocrine glands, nutritional status, sleep, climate, fever, obesity, drugs .</p> <p>The laboratory part of the course includes:</p> <p>Basic techniques for the analysis of biomolecules (fats, carbohydrates and proteins). Methods of isolation, purification, qualitative and quantitative determination of biomolecules are applied</p>
<p>Teaching methodology</p>	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.</p> <p>The laboratory part of the course takes place in the Biochemistry laboratory where laboratory exercises are conducted.</p>
<p>Bibliography</p>	<ol style="list-style-type: none"> 1. Harper's Illustrated Biochemistry, Robert K. Murray, Darryl K. Granner, Peter A. Mayes, Victor W. Rodwell, McGraw-Hill Companies; 28 th edition, ISBN: 978-0-07-170197-6 2. Biochemistry, Kent E. Vrana, Lippincott Williams and Wiluns 3. Εισαγωγή στην Βιοχημεία, Γ. Διαμαντίδης, University studio press 4. Βιοχημεία, P. Karlson, P. Docnecke, J. Koolman 5. ΒΙΟΧΗΜΕΙΑ (τόμοι Α, μέρος 1,2,3), Αντώνη Τρακατέλλη, Αδελφών ΚΥΡΙΑΚΙΔΗ
<p>Assessment</p>	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
<p>Language</p>	<p>Greek/English</p>

Course title	NUTRITION AT DIFFERENT STAGES OF LIFE (theory)			
Course code	ΔΚΔ303			
Course type	Compulsory			
Level	Undergraduate			
Year / Semester	2 year / C' semester			
Teacher's name	Constantina Jacovides			
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week -
Course purpose and objectives	The course aims to acquaint students with the needs of the human body in macro and micro nutrients in the various phases of each person's life. In addition, it aims to familiarize them with the methods of assessing the nutritional status of an individual and to develop theoretical skills for writing up and modify a diet, as well as the nutritional management of healthy individuals in the various phases of their life cycle.			
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows methods of assessing a person's nutritional status - Designs personalized diets according to the energy needs of the various stages of development of the individuals under examination. - Modifies existing nutritional plans according to the needs of the examined individuals. - Understands and recognizes people who are at nutritional risk. 			
Prerequisites	None	Required	None	
Course content	<p>Basic principles of diet planning. Nutritional evaluation. Evaluation of anthropometric indicators. Evaluation with Growth Charts. Methods of calculating dietary intake. Nutrition during pregnancy and lactation: Body size and weight of the mother before pregnancy. Weight gain of the pregnant woman. Distribution of extra weight in different tissues. Obesity during pregnancy and its consequences. Nutrition before pregnancy. Principles of nutrition plan for normal and obese pregnant women. Principles of nutrition plan for the breastfeeding mother. Infant, Childhood, and Adolescent Nutrition: nutritional requirements for protein, carbohydrates, fats, and energy. Infant requirements for minerals, trace elements and vitamins. Infant feeding methods. Comparison of breastfeeding and artificial feeding. Weaning - Reasons for introducing solid foods to infants. Possible disadvantages of early solid food intake. Recommendations for the introduction of supplementary foods. Nutrition for preschool children (1 to 3 years old). Principles of nutrition plan for children 3 to 6 years old and 6 to 12 years old. Principles of nutrition plan for children and adolescents of normal weight, overweight / obese and malnourished. Nutrition in adulthood and old age: Characteristics of old age - Changes in body composition with age. Changes in the main functions-organs of the body with age.</p>			

	Chronic age-related diseases related to diet. Energy requirements, macro nutrients, vitamins and minerals in the elderly. Medications and diet. Assessment of the dietary status of the elderly. Mediterranean diet for the elderly and dietary behavior.
Teaching methodology	The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. There is also a presentation of human systems in a special educational doll and their promotion in special software program diagrams.
Bibliography	<ol style="list-style-type: none"> 1. Διατροφή στα Στάδια της Ζωής, Επίκουρου καθηγητή Αντώνη Ζαμπέλα, Χαροκόπειο Πανεπιστήμιο, Τμήμα Επιστήμης Διαιτολογίας-Διατροφής 2. Κοντογιάννη Μ, Γιαννακούλια Μ, Καρατζη Κ, Φάππα Ε. (2015). Εγχειρίδιο Κλινικής Διατροφής. Ελληνικά και Ακαδημαϊκά Συγγράμματα και βοηθήματα. ISBN: 978-618-82124-1-1. Copyright ΣΕΑΒ 2015. 3. Human Nutrition, Catherine Geissler et al, THOMSON 4. Food, nutrition and diet therapy, Krause's , 10th Edition, Maham, Escott-Stump 5. Manual of Dietetic practice, Briony Thomas, Jacki Bishop, BLACKWELL 6. Thomas B, Bishop J, in conjunction with British Dietetic Association. Manual of Dietetic Practice (4th Edition). Wiley-Blackwell 2007.
Assessment	- Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	NUTRITION AT DIFFERENT STAGES OF LIFE (laboratory)			
Course code	ΔΚΔ304			
Course type	Compulsory			
Level	Undergraduate			
Year / Semester	2 year / C' semester			
Teacher's name	Constantina Jacovides			
ECTS	6	Lectures / week	-	Laboratories / week 1 (3 hours)
Course purpose and	The course aims to acquaint students with the needs of the human body in macro and			

objectives	micro nutrients in the various phases of each person's life. In addition, it aims to familiarize them with the methods of assessing the nutritional status of an individual and to develop practical skills for writing up and modify a diet, as well as the nutritional management of healthy individuals in the various phases of their life cycle.		
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows and applies methods of assessing a person's nutritional status - Designs personalized diets according to client's energy needs at the various stages of life. - Modifies existing nutritional plans according to the needs of the examined individuals. - Understands and recognizes people who are at nutritional risk. 		
Prerequisites	None	Required	None
Course content	<p>Basic principles of diet planning. Nutritional evaluation. Evaluation of anthropometric indicators. Stages of compiling a diet. Food groups. Equivalent Food System. Food composition tables. Evaluation with Growth Charts. Methods of calculating dietary intake. Calculation of resting metabolism. Calculation of daily needs. Caloric requirements, requirements for proteins, carbohydrates and vitamins. Requirements for minerals, trace elements, fiber and water. Nutrition and diet planning during pregnancy and breastfeeding. Obesity during pregnancy and lactation and diet planning. Dietary treatment of pregnant women with anemia, hypertension, heart disease, nausea, vomiting, constipation. Nutrition and diet planning during infancy, childhood and adolescence. Nutrition and diet planning during childhood and adolescent obesity and malnutrition. Designing a diet for vegetarian and vegan adults. Designing a diet for older adults and the elderly for weight gain and weight loss. Designing a diet for the prevention of common chronic diseases in the elderly. Design and analysis of diets using a computer.</p>		
Teaching methodology	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. There is also a presentation of human systems in a special educational doll and their promotion in special software program diagrams.</p> <p>The laboratory part takes place in the Computers laboratory. Each group works on its own bench, under the supervision of the responsible teacher. All groups work on the same topic according to the teacher's instructions. The analysis of the dietary schemes prepared by the students is analyzed in detail in terms of their composition, with the help of special nutrition software in the IT laboratory.</p>		

Bibliography	<ol style="list-style-type: none"> 1. Διατροφή στα Στάδια της Ζωής, Επίκουρου καθηγητή Αντώνη Ζαμπέλα, Χαροκόπειο Πανεπιστήμιο, Τμήμα Επιστήμης Διαιτολογίας-Διατροφής 2. Κοντογιάννη Μ, Γιαννακούλια Μ, Καράτζη Κ, Φάππα Ε. (2015). Εγχειρίδιο Κλινικής Διατροφής. Ελληνικά και Ακαδημαϊκά Συγγράμματα και βοηθήματα. ISBN: 978-618-82124-1-1. Copyright ΣΕΑΒ 2015. 3. Human Nutrition, Catherine Geissler et al, THOMSON 4. Food, nutrition and diet therapy, Krause's , 10th Edition, Maham, Escott-Stump 5. Manual of Dietetic practice, Briony Thomas, Jacki Bishop, BLACKWELL 6. A PRACTICAL GUIDE TO CHILD NUTRITION, Dare Ang , O'Donovan M, Publishers Thornes Ltd
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	FOOD MICROBIOLOGY				
Course code	ΔΚΔ305				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	2 year / C' semester				
Teacher's name	Dr. Maria Kyriakou				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is for the students to acquire basic knowledge about the microorganisms related to food and which either cause food spoilage or are pathogenic for humans and transmitted through food, or take part in food processing (fermentations, production of enzymes, etc.) consumed by people. In addition, to gain knowledge about microbiological control of food, such as detection of pathogens in food.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the main micro-organisms associated with food. - Understands the concepts of spoilage, poisoning and being able to apply preventive measures. 				

	<p>- Knows food quality control procedures to improve safety.</p> <p>- Understands the role of beneficial microorganisms in food.</p>		
Prerequisites	Introduction to Microbiology	Required	None
Course content	<p>Introduction to food microbiology</p> <p>Natural sources of food contamination (plant, animal, soil, water, air microflora)</p> <p>Principles of food preservation (heat, cold, anaerobic conditions, etc.). Advantages and disadvantages of each way</p> <p>Organoleptic characteristics of food (smell, taste, texture and aroma). Distinctions between perishable and non-perishable foods. Food fermentations. Points of differentiation between suitable, unsuitable, dirty and dangerous foods.</p> <p>Eating and waterborne bacterial diseases - prevention measures. Viruses and viral infections - prevention measures. Fungal and parasitic diseases - prevention measures.</p> <p>Natural sources of contamination of public health facilities, the development of resistant germs - Inpatient diseases. Main points of epidemiology of foodborne infections</p> <p>Food safety. Introduction to the HACCP (Hazard Analysis and Critical Control Points) system of preventive food safety. Basic rules of hygiene of food handlers. How food hygiene conditions can affect public health</p> <p>Laboratory exercises</p> <p>Microbiological techniques.</p> <p>Identification of important microorganisms for food</p> <p>Microbiological examination of water, milk, meat.</p> <p>Microbiological examination of milk.</p> <p>Food sampling</p>		
Teaching methodology	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.</p> <p>The laboratory part of the course takes place in the Biochemistry laboratory where laboratory exercises are conducted.</p>		
Bibliography	<ol style="list-style-type: none"> 1. Μικροβιολογία Τροφίμων και Πεπτικού συστήματος, Ευγενία Μπεζιρτζογλου, Επιστημονικές εκδόσεις Παρισιανού Α.Ε. 2. Γενική Μικροβιολογία Μικροβιολογία Τροφίμων 3η Έκδοση, Δρ. Ελένη Καλκάνη, Εκδόσεις ΕΛΛΗΝ 3. Microbiology Immunology and Infections Diseases, Gabrielle Vivella, Lippincott Williams and Wikins 4. Μικροβιολογία τροφίμων και στοιχεία Υγιεινής τροφίμων, Δρ Χρυσάνθη Παπαδοπούλου, Σημειώσεις 5. Μικροβιολογία Τροφίμων, Thomas J. Montville & Karl R. Matthews, Εκδόσεις ΙΩΝ 		
Assessment	<p>- Final examination: 60%</p>		

	- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	HUMAN ANATOMY AND PHYSIOLOGY II				
Course code	ΔΚΔ401				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	2 year / D' semester				
Teacher's name	Dr. Vaso Stylianou				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is to understand the structure, location and function of the circulatory, respiratory, urinary, digestive, endocrine and reproductive systems. To understand the interaction between the structure and function of organic systems.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the structure of the human body and will be able to describe its organization in individual functional systems. - Understands the basic physiological mechanisms that take place in humans at all levels, from the cellular to that of the integrated organism. - Understands the importance of maintaining homeostatic mechanisms for human health and to recognize the factors that contribute to the manifestation of diseases. - Knows the necessary knowledge for important physiological functions, such as the digestion of food and the metabolism of nutrients. 				
Prerequisites	Human Anatomy and Physiology I	Required	None		
Course content	<p>Circulatory System: anatomical elements, heart and vascular system, systemic and pulmonary circulation, control of cardiovascular function and regulation of systemic blood pressure, the Lymphatic system.</p> <p>Respiratory system: anatomical elements, organization of the respiratory system, ventilation and mechanics of the lungs, gas exchange and transport</p> <p>Urinary system: anatomical elements, structure and functions of the kidney, basic renal processes, regulation of water and electrolyte balance</p> <p>Digestive System: anatomical elements, secretory functions, digestion and absorption of food in the gastrointestinal tract, regulation of gastrointestinal function. Nutrition and</p>				

	<p>metabolism</p> <p>Endocrine System: anatomical elements, the endocrine glands and their secretions, principles of operation of hormonal control systems, regulation of growth and development of the body.</p> <p>Reproductive system: anatomical elements, reproductive functions in man and woman, pregnancy, lactation</p> <p>The laboratory part of the course includes:</p> <p>Interactive exercises in programs that simulate the functions of various systems in the human body (circulatory, digestive, etc.).</p> <p>Measurements of physiological parameters in humans: Arterial pulse, Blood pressure</p> <p>Histological observation of various organs</p> <p>Student presentations in relation to the content of the course in order to fully understand it.</p>
Teaching methodology	The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. There is also a presentation of human systems in a special educational doll and their promotion in special software program diagrams.
Bibliography	<ol style="list-style-type: none"> 1. Ανατομία και Φυσιολογία του Ανθρώπινου Σώματος, Lucille Keir etc, Εκδόσεις ΕΛΛΗΝ 2. Βασικές Αρχές Ανατομίας, Στέφανος Π. Λαζαρίδης, Εκδόσεις ΕΛΛΗΝ 3. Ανατομία- Φυσιολογία, Κατρίτση- Κελέκη, Ίδρυμα Ευγενίδου 4. Ιατρική Φυσιολογία, Τόμος Α'+Β'+Γ', Συγτον, Εκδόσεις Γ. Παρισιανός 5. Φυσιολογία του Ανθρώπου, Ν. Σοφιάδης Gabriel A. Khasabov, University Studio Press
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	BIOCHEMISTRY & METABOLISM II
Course code	ΔΚΔ402
Course type	Compulsory
Level	Undergraduate
Year / Semester	2 year / D' semester
Teacher's name	Dr. Artemis Elia

ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The course aims to acquire basic knowledge of the metabolism of biomolecules such as glycolysis, the citric acid cycle, the respiratory chain, oxidative phosphorylation, etc., which are necessary for understanding the main functions of the cell/organism.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Understands the various catabolic and anabolic pathways that take place within a cell and throughout the organism. - Knows the biochemical processes by which proteins, fats, nucleic acids and carbohydrates are metabolized. - Understands the rules/principles that govern the control and operation of biochemical processes. - Understands the interaction and regulation of biochemical metabolic pathways to meet the individual's energy needs, using the micronutrients and macronutrients of the diet or activating reserves. 				
Prerequisites	Biochemistry & Metabolism I	Required	None		
Course content	<p>Introduction to metabolism: stages of metabolism, metabolic control.</p> <p>Biological oxidations - Electron transfer: respiratory chain, oxidative phosphorylation, photosynthesis-photophosphorylation.</p> <p>Carbohydrate metabolism: Main glycolytic process, metabolic pathways of pyruvate, citric acid cycle, energy production from biological combustion of glucose, gluconeogenesis, glycogenolysis, glycogenogenesis, metabolism of other monosaccharides and disaccharides</p> <p>Lipid metabolism: fatty acid biosynthesis, β-oxidation, other fatty acid oxidation processes, ketones, bile synthesis of bile acids and steroids, triglyceride metabolism</p> <p>Protein-amino acid metabolism: Proteolytic enzymes, amino group metabolic reactions, decarboxylation of amino acids, urea cycle, description (reference) of biosynthesis and degradation pathways of protein amino acids.</p> <p>Metabolism of purine and pyrimidine derivatives: Biosynthesis and their degradation.</p> <p>The laboratory part of the course includes:</p> <p>Enzyme reaction kinetics: determinations of optimal conditions and determinations of constant and type of enzyme reaction under the influence of agents and inhibitors</p> <p>DNA isolation. Purity testing and DNA denaturation.</p> <p>Krebs cycle reactions.</p>				
Teaching methodology	<p>The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.</p> <p>The laboratory part of the course takes place in the Biochemistry laboratory where</p>				

	laboratory exercises are conducted.
Bibliography	<ol style="list-style-type: none"> 1. Harper's Illustrated Biochemistry, Robert K. Murray, Darryl K. Granner, Peter A. Mayes, Victor W. Rodwell, McGraw-Hill Companies; 28 th edition, ISBN: 978-0-07-170197-6 2. Βιοχημεία, Lubert Stryer, Πανεπιστημιακές εκδόσεις Κρήτης 3. Biochemistry, Kent E. Vrana, Lippincott Williams and Wilkins 4. Βιοχημεία, P. Karlson, P. Docnecke, J. Koolman 5. Μαθήματα Βιοχημείας, Ε. Φραγκούλης, Ιατρικές εκδόσεις ΛΙΤΣΑΣ 6. Βιοχημεία (τόμοι Α, μέρος 1,2,3), Αντώνη Τρακατέλλη, Αδελφών Κυριακίδη
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	NUTRITIONAL EVALUATION				
Course code	ΔΚΔ403				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	2 year / D' semester				
Teacher's name	Dr. Anna Papageorgiou				
ECTS	6	Lectures / week	1 (1 hour)	Laboratories / week	1 (2 hours)
Course purpose and objectives	The aim of the course is to familiarize the students with the methods used to assess the nutritional status and to utilize the resulting results in order to organize the nutritional intervention. In addition, it aims to educate students regarding the correct application of techniques and tools so that the assessment of the examinee's nutritional status can be done holistically with accuracy and validity.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Describes the methods used to assess nutritional status and to choose the most appropriate assessment method depending on each case. - Evaluates the results and organizes the nutritional intervention. - Records clinical indicators, medical and family history, dietary intake, dietary habits, 				

	<p>physical activity levels and energy expenditure to evaluate subjects.</p> <p>- Calculates the indicators (anthropometric, body composition index) for the evaluation of the examined clients/patients.</p>		
Prerequisites	None	Required	None
Course content	<p>Complete nutritional assessment of the client / patient (Medical history, family history, anthropometric indicators, clinical examination, biochemical indicators). Methods of assessing body composition. BIA, DEXA, X-rays, Harpenden. Weight and height evaluation. Methods of assessing dietary intake (24-hour recall, food diary, food consumption frequency questionnaire) Methods of evaluating physical activity. Use of hematological, biochemical and other laboratory indicators to assess nutritional status as well as use of indicators to assess the state of the human body in proteins, minerals (iron, calcium) and vitamins. Nutritional evaluation for the prevention of chronic diseases. Nutritional evaluation in the hospital patient. Nutritional evaluation of a pediatric patient. Nutritional evaluation of older patients.</p> <p>Laboratory: Complete client/patient nutritional assessment. Laboratory exercises of dietary intake assessment methods. Familiarity with body composition assessment methods (BIA) and Basal Metabolic Rate assessment methods. Harpenden. Weight and height evaluation. Exercises of hematological, biochemical and other laboratory indicators.</p>		
Teaching methodology	<p>The course is carried out using p.point and audiovisual media.</p> <p>The laboratory part takes place in the ergometry laboratory but also in the Computers laboratory.</p>		
Bibliography	<ol style="list-style-type: none"> 1. Γιάννης Μανιός, <i>Διατροφική Αξιολόγηση</i> (2006), , Ιατρικές εκδόσεις, Π.Χ. Πασχαλίδης 2. Robert Lee and David Nieman (2013) <i>Nutritional Assessment</i>. 3. <i>Manual of dietetic Practice</i>, Briony Thomas Jacki Bishop, Blackwell 4. <i>Counselling skills for Dieteticians</i>, Lydy Gable, Blackwell 5. Nieman DC. (2019) <i>Nutritional Assessment (7nd Ed)</i>. Boston, McGraw-Hill Education 		
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>		
Language	Greek/English		

Course title	FOOD AND ENVIRONMENT				
Course code	ΔΚΔ404				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	2 year / D' semester				
Teacher's name	Dr. Anastasia Perikkou				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The aim of the course is to give students the necessary knowledge about the use of resources for food production, the creation of waste, the effects on the environment and nutritional crises. In addition, the aim is to understand and relate food quality to contemporary environmental problems.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Understands the effects on the environment of food production and consumption - Knows how municipal waste from food consumption is managed and disposed of. - Knows the various impact mechanisms of food distribution, production and consumption technology on the environment. - Understands the correlation between environmental problems and effects on food. 				
Prerequisites	None	Required	None		
Course content	<p>Pollutants and contaminants in food.</p> <p>Environmental pollutants (organic, inorganic, living, radioactive) in food.</p> <p>Food safety and environment.</p> <p>Techniques for analysis of environmental pollutants in food.</p> <p>Effects on the environment from food production. Environmental management systems in the production, processing and handling of food.</p> <p>Waste management: Management and disposal of urban waste from food consumption.</p> <p>Natural resource management and food production. Organic food and environment.</p> <p>Genetically modified food and environment.</p> <p>Biofuels and food availability.</p> <p>Irradiated food and environment.</p> <p>Food life cycle and its analysis. Life cycle analysis as a tool for environmental impact assessment.</p>				
Teaching	The course will be conducted using audiovisual media. Pictures and videos will be				

methodology	provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.
Bibliography	<ol style="list-style-type: none"> 1. Γκέκας Β., Μπαλτά Κ. (2005). Βιομηχανία Τροφίμων και Περιβάλλον, Εκδ. Τζιόλα 2. Μπλούκας Γ.Ι, (2004). Συσκευασία Τροφίμων, Εκδ. Σταμούλη 3. Colin Sage, Environment and Food (Routledge Introductions to Environment: Environment and Society 4. Βιολειτουργικά συστατικά και Πρόσθετα τροφίμων Σφλώμος Κωνσταντίνος ISBN: 978-618-83264-5-3, Έκδοση: 1/2017, Διαθέτης (Εκδότης): ΚΥΡΙΑΚΟΣ ΑΛΕΞΙΟΥ & ΣΙΑ ΕΕ
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	NOSOLOGY AND PATHOLOGY OF THE ENDOCRINE GLANDS			
Course code	ΔΚΔ405			
Course type	Compulsory			
Level	Undergraduate			
Year / Semester	2 year / D' semester			
Teacher's name	Dr. Vaso Stylianou			
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week -
Course purpose and objectives	The aim of the course is for students to understand the basic concepts of health and disease, to understand how to approach diseases, how to evaluate and investigate in nosology as well as to understand the basic symptoms of the main nosological entities and endocrine diseases in particular.			
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the main diseases of human systems and the possible symptoms. - Knows the diagnostic tests that are usually performed for these diseases. - Knows the main endocrine diseases and possible symptoms. - Acquire knowledge and skills useful for nutritional support of prevention and/or 			

	treatment.		
Prerequisites	None	Required	None
Course content	<p>Health and disease. Diagnostic criteria. Medical history. General causes of diseases. Ways of transmission.</p> <p>International statistical classification of diseases. 'Health-disease concept. General causes of diseases (known - unknown etiology). Prevention concept. Patient approach methodology. Record. Objective examination. Laboratory Tests. Clinical semiology of diseases (summary).</p> <p>Concept of infectious disease, epidemic, endemic, inpatient infection, opportunistic infection, sexually transmitted diseases.</p> <p>Blood disorders - anemia, aplastic anemia, iron deficiency anemia, hemolytic anemias, B12 and folic acid deficiency, leukemias. Hemostasis disorders - coagulation mechanism, hereditary and acquired hemostasis disorders, thrombophilia.</p> <p>Circulatory disorders: Hypertension. Hypotensive syndrome. Dyslipidemias. Coronary heart disease. Angina pectoris. Ischemia. Myocardial infarction. Embolism. Sudden death. Heart failure. Cardiac cachexia. Acute pulmonary edema. Shock. Valve diseases - Cardiomyopathies - Pericarditis in general. Cardiac arrhythmias. Aortic aneurysms. Congenital heart diseases. Artificial pacing elements - defibrillators - prosthetic valves.</p> <p>Diseases of the esophagus, stomach and bile ducts - Diarrhea, constipation and malabsorption, Diseases of the small and large intestine. Lactose intolerance, inflammatory bowel disease, irritable bowel syndrome, diverticulitis, celiac disease. Diseases of the liver and pancreas.</p> <p>Diseases of the joints, bones and collagen - rheumatic diseases, gout, rheumatoid arthritis, osteoarthritis. Osteoporosis, osteomalacia. Lupus erythematosus.</p> <p>Diseases of the urinary system. nephritis, pyelonephritis, cystitis, nephrolithiasis, acute and chronic renal failure.</p> <p>Diseases of the respiratory system. bronchitis, pneumonia, bronchial asthma, tuberculosis of the lung.</p> <p>Neoplastic diseases, Benign neoplasms, malignancies, etiology, early diagnosis, age-related manifestations, diagnostic methods, treatment.</p> <p>Neurological disorders. epilepsy, mental dementia, Parkinson's disease, diseases of muscle and motor neurons, multiple sclerosis.</p> <p>Mental illness and behavioral disorders. Regulation of appetite and body weight. Weight gain and loss, obesity - bulimia nervosa and psychogenic anorexia.</p> <p>Immune reactions to food (food allergy and intolerance, acquired immune deficiency syndrome. Immunity. Hypersensitivity reactions (anaphylaxis, serous, allergy).</p> <p>Skin diseases.</p> <p>Metabolic diseases (alkaptonuria, phenylketonuria, hemochromatosis).</p> <p>Disorders of endocrine regulation, diseases of the anterior and posterior lobes of the pituitary gland, diseases of the hypothalamus</p> <p>Acid-base imbalances of water and electrolytes</p>		

	Disorders of thyroid and parathyroid function Adrenal and gonadal disorders Gastrointestinal and pancreatic disorders
Teaching methodology	The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.
Bibliography	<ol style="list-style-type: none"> 1. Παθολογία, Ashar, Miller, Sisson, The Johns Hopkins, 864 σελ., Έκδοση 5η/2017, Εκδόσεις- Λαγός Δ 2. Εγχειρίδιο Παθολογίας, Βενετικού Μ, Ιατράκης Γ: Εκδόσεις Ζεβελεκάκη, 2015 3. Παθοφυσιολογία Νόσων, Hart N.M., Loeffler G.A. 640 σελ., Έκδοση: 1η έκδ./2013, Εκδόσεις- Broken Hill Publishers 4. «Νοσολογία – Παθολογία» (τόμος Α', Β', Γ', Δ'), Χανιώτης Φ., Χανιώτης Δ. εκδόσεις Λίτσας, 2002 Ελληνική: Νοσολογία-Παθολογία 5. Pathophysiology of disease: An introduction to Clinical Medicine, McPhee S, Canong W: The McGraw-Hill Companies Inc, N.Y. USA, fifth edition, 2006 6. Principles of Internal Medicine", 17th edition. Fauci A., et.al. "HARRISON'S. The McGraw-Hill Companies Inc., N.Y. USA 2008
Assessment	- Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	BASIC PRINCIPLES OF CLINICAL NUTRITION				
Course code	ΔΚΔ501				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / E' semester				
Teacher's name	Mikaella Nikolaou				
ECTS	6	Lectures / week	1 (1 hour)	Laboratories / week	1 (2 hours)
Course purpose and objectives	The aim of the course is to get to know the methods and indicators for assessing the nutritional status of the patient in order to make an early recognition of the eating disorder, the treatment and then an assessment of the effectiveness of the nutritional intervention.				
Learning outcomes	Upon completion of the course, the learner will be able to:				

	<ul style="list-style-type: none"> - Understands the interaction between nutrition and disease and the modification of metabolic mechanisms and metabolic requirements. - Understands the impact of these changes on the calculation of patients' nutritional needs. - Acquire basic knowledge of enteral and parenteral nutrition. - Evaluates the effectiveness of the nutritional intervention. 		
Prerequisites	None	Required	None
Course content	<p>Understanding the interaction of diet/nutrition and disease, diet and medication.</p> <p>Nutritional Patient Care. Prioritization exercises in patients with complex problems. Nutritional diagnosis. Nutritional intervention. Nutritional care team.</p> <p>Analyses of Biochemical Indicators.</p> <p>Evaluation of the nutritional status of patients depending on their age and their health status - Malnutrition. Nutritional Assessment of a Pediatric Patient. Nutritional Assessment of the elderly. Nutritional risk tools. Nutritional care records.</p> <p>Special diets (hospital diets). Low fat, low protein, low sodium diet. Increased in energy and protein diet. Low in fibres diet.</p> <p>Nutritional support. Oral, Enteral and Parenteral. Method of administration of nutritional support. Assessment of functional status of the gastrointestinal tract.</p> <p>Laboratory Part:</p> <p>Obtain a medical history. Nutrition assessment and malnutrition risk assessment. Patient's nutritional evaluation.</p> <p>Evaluation of laboratory and clinical findings.</p> <p>Evaluation of anthropometric indicators and classification in a metabolic model.</p> <p>Evaluation of biochemical nutrition indicators. Evaluation of indicators of the state of metals, electrolytes, vitamins. Evaluation of immune status.</p> <p>Calculation of daily needs depending on metabolic status. Diet planning in cases of hypermetabolism (patients with stress, sepsis, burn, surgery, and trauma).</p> <p>Nutritional support. Enteral and Parenteral nutrition. Familiarity with artificial feeding methods (catheter pumps, artificial feeding solutions).</p>		
Teaching methodology	<p>This course includes the use of p.point and audiovisual media and laboratory exercises. The laboratory exercises will be carried out mainly in the classroom and when necessary, homework will be assigned. Discussion and dialogue between teacher and students during the lesson will always be desirable.</p> <p>The laboratory part takes place in the Computers laboratory. Each group works on its own bench, under the supervision of the responsible teacher. All groups work on the same topic according to the teacher's instructions. The analysis of the dietary schemes prepared by the students is analyzed in detail in terms of their composition, with the help of special nutrition software in the Computers laboratory.</p>		

Bibliography	<ol style="list-style-type: none"> 1. Εγχειρίδιο Κλινικής Διατροφής , Κοντογιάννη, Μ., Γιαννακούλια, Μ., Καράτζη, Κ. and Φάππα, Ε. eds., (2015). 2. Kathleen Mahan, Janice Reymond. Krause's Food & the Nutrition Care Process (Krause's Food & Nutrition Therapy) 14th Edition, 2017. 3. Κλινική Διατροφή, Gibney M, Elia M, Ljungqvist O, Dowsett J, 2010, Μανιός Ι.(επμ.), Παρισιάνος (εκδ.) 4. The Nutrition Care Process. Brylinsky CM. In Mahan LK, Escott-Stump S. 5. Modern nutrition in Health and disease, Maurice E. Shils et al, Lippincott Williams and Willkins
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	ORGANIZATION AND MANAGEMENT OF NUTRITIONAL UNITS				
Course code	ΔΚΔ502				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / E' semester				
Teacher's name	Dr. Maria Kyriakou				
ECTS	6	Lectures / week	1 (1 hour)	Laboratories / week	1 (2 hours)
Course purpose and objectives	The aim of the course is to acquire basic knowledge about the provision and quality of meals on a large scale, the application of hygiene rules and the principles of administration and management of food units.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the categories of power units and the characteristics of an operating system. - Understands the importance of planning, making valid and correct decisions, the key factors for the correct implementation of the program and the management of food units' documents-books. - Knows about the design of facilities and equipment, ISO=international standardization organization, the staffing of food units, and - Trains, informs and sensitizes the staff. 				
Prerequisites	None	Required	None		

<p>Course content</p>	<p>Basic principles for the production, making, preparation and distribution of large-scale meals. Ways to ensure the quality and hygiene of products in food units.</p> <p>General rules for food businesses: Choosing a building location. Building design. Building construction. Facility equipment. Maintenance of equipment and building. Hygiene program. Cleaning and disinfection. Control of rodents and insects. Personnel training. Personal hygiene</p> <p>Management and administration of food units: organization planning, connection of procedures, management organization chart, personnel management, financial resource management.</p> <p>Quality Assurance - Total Quality Management: Quality Assurance, Historical Quality Control Review, Total Quality Management and the Governments That Govern It, Total Quality Costs, IOP Objectives and Consequences, IOC-ISO 9000 Relationship, Quality Improvement Methodology, control diagrams of food properties / characteristics</p> <p>Application of hygiene rules in the preparation of meals. Application of HACCP in food businesses. Implementation of HACCP plan in hospital nutrition department, differences from the food industry.</p> <p>Quality standards: ISO-various types of ISO. Benefits of applying quality standards - quality assurance in food establishments.</p> <p>Organization and operation of a hospital nutrition department: activities, staffing of a nutrition department, documents of a nutrition department. Compilation and formulation of dietary programs for hospitalized patients and staff. Different types of diets in the hospital. Basic activities of the nutrition department.</p> <p>The laboratory part of the course includes:</p> <p>Basic principles for the creation of small, medium and large food units.</p> <p>Analysis of ISO 22000: 2005 and other quality standards.</p> <p>Visits to beverage and food industries, restaurants and other food establishments.</p>
<p>Teaching methodology</p>	<p>The course will be conducted using audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.</p> <p>The laboratory part of the course takes place in the Food Laboratory. Each group works on its own bench, under the supervision of the responsible teacher. Visits are made to food establishments and a study of their administration and management, visits to hotel complexes, restaurants and commercial industries.</p>
<p>Bibliography</p>	<ol style="list-style-type: none"> 1. ΑΣΦΑΛΕΙΑ ΤΡΟΦΙΜΩΝ - ΕΦΑΡΜΟΓΗ ΤΗΣ ΑΝΑΛΥΣΗΣ ΕΠΙΚΙΝΔΥΝΟΤΗΤΑΣ ΚΑΙ ΚΡΙΣΙΜΩΝ ΣΗΜΕΙΩΝ ΕΛΕΓΧΟΥ HACCP ΣΤΙΣ ΒΙΟΜΗΧΑΝΙΕΣ ΠΡΟΤΙΜΩΝ ΚΑΙ ΠΟΤΩΝ, Ιωάννης Αρβανιτογιάννης και συν., Εκδόσεις University Studio Press, 2001 2. Οργάνωση Υπηρεσιών και Συστημάτων Υγείας, τομ. Α, Λυκούργος Λ. Λιαρόπουλος, Βήτα, 2007 3. Κανόνες ορθής υγιεινής πρακτικής για τις επιχειρήσεις τροφίμων, εκδόσεις University Studio Press 4. Υγιεινή χώρων μαζικής Εστίασης Και Ζαχαροπλαστικής, Γ. Κλειδαράς, εκδόσεις

	<p>ΙΩΝ</p> <p>5. Οργάνωση υπηρεσιών και συστημάτων Υγείας, Λυκούργος Λ. Λιαρόπουλος</p> <p>6. HACCP- A practical Approach, Sava Montinove</p>
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	NUTRITION AND PUBLIC HEALTH				
Course code	ΔΚΔ503				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / E' semester				
Teacher's name	Mikaella Nikolaou				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	<p>The aim of the course is for students to acquire the necessary knowledge about the basic principles of public health and the role of nutrition, to understand that nutrition for public health is necessary for the prevention of diseases, the increase of life expectancy and the promotion of health. In addition, it includes the evaluation of health, dietary prevention and nutritional intervention at the public health level.</p>				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Recognizes the factors that influence the formation of the dietary model of a population - Knows the problems of global nutrition - Explains the factors that determine the diseases of modern society and how they affect Public Health - Knows about the nutritional policy strategies-practices, which are implemented with the aim of improving the health level of the country. 				
Prerequisites	None	Required	None		
Course content	<p>Review of nutrition and public health</p> <p>Nutritional Epidemiology</p> <p>Assessment of nutritional status in individuals and populations</p> <p>Assessment of physical activity</p>				

	<p>Dietary patterns</p> <p>DRVs - Dietary Reference Intake Values</p> <p>Vitamin A deficiency</p> <p>Iron deficiency</p> <p>Iodine deficiency</p> <p>Prenatal and perinatal nutrition</p> <p>Nutrition and development of children and adolescents</p> <p>Elderly nutrition</p> <p>Obesity as a public health problem</p> <p>Maternal obesity – Childhood obesity</p> <p>Cardiovascular disease: Sodium and hypertension</p> <p>Cardiovascular disease: Quality of dietary fat</p> <p>Nutrition and cancer</p> <p>Bone health and dental health</p> <p>National and International nutrition strategies and public health interventions</p> <p>Evaluation of public health interventions and policies</p>
Teaching methodology	The course will be conducted with p.point and the use of audiovisual media. Images and videos will be provided to students when and where needed for further understanding of key concepts.
Bibliography	<ol style="list-style-type: none"> 1. Διατροφή και Δημόσια Υγεία, M. Gibney, B. Margetts, J Kearney, L.Arab, 2009 2. Public Health. Buttriss JL et al. (2018). WileyBlackwell. 978-1-118-66097-3 3. Nutrition Public health Nutrition: from principles to practice – edited by Mark Lawrence & Tony Woesley , Εκδόσεις 2010 4. Counseling skills for dietitians – Gable, Judy, 2^η Έκδοση 2007 5. Communication and education Skills for dietetic Professionals, Betsey B., Hali Richard, Julie O Sullivan, 2003, publishers Lippincott Williams & Wikkins Fourte
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	BEVERAGE AND FOOD LEGISLATION
Course code	ΔΚΔ304
Course type	Compulsory

Level	Undergraduate				
Year / Semester	3 year / E' semester				
Teacher's name	Dr. Anastasia Perikkou				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The aim of the course is to understand and apply the legislation on drinks and food for the correct and safest operation of the profession of dietician. In addition, it is the acquisition of the necessary knowledge about the constitution, the legislation, the marketing rules of various food categories and the legislation related to the labelling of nutritional facts.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows and analyses the legislative regulations that apply in Cyprus and the European Union and concern food, hygiene and safety, public health, the consumer, the profession of a dietician. - Knows the basic principles and requirements of food legislation. - Knows the competent authorities involved in the implementation and control of food legislation. - Knows the appropriate sources to search for information on legislation. 				
Prerequisites	None	Required	None		
Course content	<p>The series of legal regulations in force in Cyprus regarding beverages and food. Analyze them and compare them with similar legislation that exists in Europe.</p> <p>Analysis of basic principles and requirements of food law, supply chain "from the field to the consumer's plate", European Union regulations and guidelines on food labeling, use of nutrition and health claims, information and consumer protection strategies, crisis management , official controls etc.</p> <p>Understanding concepts such as risk analysis, precautionary principle, traceability, etc.</p> <p>The European Food Safety Authority (EFSA), the Food and Feed Early Warning System (RASFF).</p> <p>National food law and the Law on the Registration of Food Scientists and Dietitians.</p> <p>Food law and the Law on the Registration of Food Scientists and Dietitians in Cyprus.</p>				
Teaching methodology	The course will be conducted with p.point and the use of audiovisual media. Images and videos will be provided to students when and where needed for further understanding of key concepts. Participation for class discussion is desirable and will be sought by the course teacher.				
Bibliography	<ol style="list-style-type: none"> 1. Υγειονομική Νομοθεσία, Χ. Κούτης , ΕΛΛΗΝ ΠΑΠΑΖΗΣΗ 2. Planning and Control for Food and Beverage Operations, J.D. Ninemeier, Educational Institute 				

	<p>3. Ασφάλεια τροφίμων, Ι. Αρβανιτογιάννης, Δ Σανδρου, Λ. Κούρτης, εκδόσεις University Studio Press 2001</p> <p>4. Επιτροπή Ευρωπαϊκών Κοινοτήτων. Γενικές αρχές της νομοθεσίας τροφίμων στην Ευρωπαϊκή Ένωση – Πράσινη Βίβλος</p> <p>5. European Commission. Ευρωπαϊκοί Κανονισμοί 178/2002, 852/2003. 853/2003, 1169/2011, 1333/2008, 1334/2008, 1129/2011, 1881/2006, 470/2009, 1935/2004, 1829/2003, 1830/2003.</p>
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	ENTREPRENEURSHIP AND INNOVATION				
Course code	ΔΚΔ505				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / E' semester				
Teacher's name	Panayiotis Jacovides				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The aim of the course is to offer the knowledge of the methodology of setting a new business while examining all the legal, financial and managerial aspects for doing so, in an interactive way. An important aspect is innovation and the way that it is inserted into various models of business in order to be more competitive. The students must feel comfortable via this module to start and manage their own business.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Identify business opportunities and innovation - Create and implement its own ideas and concepts - Make a Business Model and Value Chain, a Business Plan, a financial / feasibility plan - Make decision in day-to-day business and create Marketing Plans 				
Prerequisites	None	Required	None		
Course content	Definitions of Entrepreneurship and Innovation. Understanding Business Evolution. Turning ideas into a business. Legislations and business context				

	<p>Structuring a Venture: Value chain analysis. Business Modelling using Canvas. Applying different principles on Canvas. Presenting the Canvas.</p> <p>Market Analysis: Research Principles in practice. Competition analysis. Consumer analysis. Market Research / Statistics. PESTEL. Porter 5 Forces. SWOT Analysis</p> <p>Strategy, Sales, Marketing: Including Innovation in Strategy. Strategic Planning. Marketing Plan – 7 Ps. Sales and Negotiations. Sales Management</p> <p>Financial Analysis: Investment Costs, Fixed Costs, Cost of Sales, Income Projections, Profit and Loss, Break-even point, Cash-flows, Financial Ratios and KPIs, NPV/IRR</p>
Teaching methodology	The course will be conducted using PowerPoint and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. The students will be working through templates of business models and plans provided by the professor.
Bibliography	<ol style="list-style-type: none"> 1. Peter F. Drucker (2006), Innovation and Entrepreneurship, Harpers Business 2. Clayton M. Christensen (2011), The Innovator's Dilemma: The Revolutionary Book That Will Change the Way You Do Business, Harpers Business essentials 3. Eric Ries (2011), The Lean Startup: How Today's Entrepreneurs use continuous innovation to create radically successful businesses, Crown Business of Crown Publishing Group. 4. Vince, D. (2020). Manifesto: How a maverick entrepreneur took on British energy and won. Ebury Press. 5. Gates, B. (2021). How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need. Allen Lane; 1st ed. 6. Jordan, N. (2020). Eco-Innovation and Digitalisation. Case studies, environmental and policy lessons from EU Member States for the EU Green Deal and the Circular Economy. https://ec.europa.eu/environment/ecoap/about-eco-innovation/policies-matters
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	CLINICAL NUTRITION AND DIETETICS (theory)				
Course code	ΔΚΔ601				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / F' semester				
Teacher's name	Constantina Jacovides				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-

Course purpose and objectives	The aim of the course is to acquire basic knowledge about diseases related to nutrition and dietary deviations and which require special therapeutic treatment or preventive intervention at the level of hospital care or primary health care of the population. Basic theoretical principles of designing a diet for pathological conditions.		
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows pathological conditions that need nutritional intervention. - Understands the importance of preventing serious health problems. - Knows the nutritional treatment of serious health problems. - Assesses nutritional needs of patients. 		
Prerequisites	Basic Principles of Clinical Dietetics	Required	None
Course content	<p>Nutrition and cardiovascular diseases: Risk factors for cardiovascular disease. Dietary habits and factors directly related to cardiovascular disease. Nutritional treatment. Hyperlipidemia, hypercholesterolemia, familial and non-familial and their nutritional treatment. Nutritional evaluation: laboratory-biochemical findings, physiological characteristics, diagnosis of hyperlipidemia, treatment-dietary and pharmaceutical. Obesity and hypertension-dietary intervention.</p> <p>Nutritional diseases of the gastrointestinal system. Nutrition and diseases of the oesophagus - stomach: Esophagitis and dietary treatment. Indigestion and diet. Gastritis and diet. Gastric and duodenal ulcers and dietary intervention (general characteristics of the diet, food acidity, foods that form gas, foods that cause damage to the gastric mucosa, foods that increase gastric secretion) -dietary treatment and intervention. Peptic ulcer. Dietary treatment of Dumping syndrome.</p> <p>Nutrition and diseases of the small intestine: Absorption syndromes: Gluten enteropathy, Celiac disease, Enzyme deficiency for the hydrolysis of disaccharides (lactase). Blind helix syndrome, bacterial overgrowth, gastrointestinal fistulas, diarrhea.</p> <p>Nutrition and diseases of the large intestine: Flatulence, Constipation and dietary intervention, Inflammatory bowel disease, ulcerative colitis - dietary treatment, Crohn's disease - dietary treatment, irritable bowel syndrome, short bowel syndrome.</p> <p>Nutrition and diseases of the liver - pancreas: Viral hepatitis. Hepatitis of non-viral etiology. Chronic hepatitis, fatty liver, acute liver disease, liver cirrhosis, hepatic encephalopathy, Wilson's disease, alcoholic liver disease and dietary treatment. Nutritional evaluation of patients with liver diseases. Bile disorders, chronic cholecystitis, cholecystopathy, cholecystitis, cholelithiasis, acute and chronic pancreatitis. Nutritional evaluation and treatment of patients with pancreatic disorders.</p> <p>Endocric diseases: Nutrition and endocrine diseases: Type I Diabetes mellitus. Type II Diabetes mellitus: nutritional treatment and intervention. Special types of diabetes, gestational diabetes. Acute complications of diabetes, medication, exercise and diabetes. Alcohol and diabetes. Diabetic nutritional treatment: Personalization of the diet, Sweeteners and diabetes, Foods for diabetics, calculation of the diabetic diet. Hypoglycemia and dietary treatment.</p> <p>Nutrition and kidney diseases: Nutrition-related kidney diseases. Nephrotic syndrome - nutritional treatment. Acute renal failure: fluid balance and Na, K, calories, protein, nutritional intervention. Chronic renal failure: Relationship between chronic renal failure</p>		

	<p>and metabolism of certain nutrients. Malnutrition and nutritional assessment in renal failure. Nephrolithiasis- Dietary treatment. General nutritional recommendations for nephrolithiasis.</p> <p>Nutrition in malignant diseases: The nature of cancer. Causes. Relationship between food and cancer. The effects of cancer. Digestive tract cancer. Breast cancer. Cancer of the female genitals. Urinary tract cancer. Prostate cancer. Cancer treatment. Nutrition of cancer patients.</p>
Teaching methodology	<p>This course includes the use of p.point and audiovisual media and laboratory exercises. The laboratory exercises will be carried out mainly in the classroom and when necessary, homework will be assigned. Discussion and dialogue between teacher and students during the lesson will always be desirable.</p>
Bibliography	<ol style="list-style-type: none"> 1. Κλινική Διατροφή και Διαιτολογία με Στοιχεία Παθολογίας, Ζαμπέλας Α., Αθήνα, Ιατρικές Εκδόσεις Πασχαλίδη, 2011. ISBN13:9789604892938 2. Advancing Dietetics and Clinical Nutrition, Anne Payne, Helen Barker, Churchill Livingstone Elsevier 3. Food, nutrition and diet therapy, Krause's , 10th Edition, Maham, Escott-Stump 4. Manual of dietetic Practice- 3rd edition, Briony Thomas, Blackwell Publishing 5. American Dietetic Association (ADA), Nutrition Care Manual, ADA, 2008. 6. European Journal of Clinical Nutrition
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	CLINICAL NUTRITION AND DIETETICS (laboratory)				
Course code	ΔΚΔ602				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / F' semester				
Teacher's name	Constantina Jacovides				
ECTS	6	Lectures / week	-	Laboratories / week	1 (3 hours)
Course purpose and objectives	<p>The aim of the course is the practical application of the theoretical knowledge of clinical dietetics. Learning to design diets according to the disease or diseases that the patient presents by understanding the changes in metabolic needs and nutritional requirements that the body shows according to the disease that it presents.</p>				

Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows how to assess the nutritional status of patients with diabetes, cancer, kidney diseases, psychogenic diseases, chronic diseases of the elderly, etc. - Knows how to design, analyse and prepare diets for these pathological conditions. - Knows how to apply a holistic approach to a clinical case and evaluate the effectiveness of nutritional interventions taking into account the patient's health status. - Knows the basic principles of enteral and parenteral nutrition. 		
Prerequisites	Basic Principles of Clinical Dietetics	Required	Clinical Nutrition and Dietetics (T)
Course content	<p>Nutritional treatment of Hyperlipidemia, hypercholesterolemia, familial and non-familial. Obesity and hypertension-dietary intervention.</p> <p>Diets for digestive diseases (Gastroesophageal reflux disease, Gastroesophageal ulcer, Gastritis, Dumping Syndrome). Foods and their PH content. Low lipid diets. Diets high or low in fiber. Standard diets for intestinal diseases (celiac disease, ulcerative colitis, Crohn's disease). Lactose and gluten intolerance diets.</p> <p>Nutrition and diseases of the liver – pancreas. Fatty liver, acute liver disease, cirrhosis, pancreatitis and nutritional treatment.</p> <p>Nutrition and diet planning and calculation for diabetes type I, type II and diabetes during pregnancy. Diabetic equivalents. Glycemic index of foods. Low/high protein diets. Exercise and diabetes. Alcohol and diabetes type I and II. Personalization of the diet (energy requirements, macro and micro nutrient needs, sweeteners, glycemic index, carbohydrate count).</p> <p>Nutrition and diet planning for kidney diseases (Chronic renal failure, Acute renal failure, renal patients on dialysis and transplanted kidney patients). Standard Diets for Hyperuricemia and Gout. Low protein diets (renal failure).</p> <p>Nutrition and diet of eating disorders (Diets for patients with anorexia nervosa and bulimia nervosa).</p> <p>Cancer patients: Diets for lung cancer patients. Digestive tract cancer. Breast cancer. Cancer of the female genitals. Urinary tract cancer. Prostate cancer. Cancer treatment. Nutrition of cancer patients. Diet for a patient with HIV infection.</p> <p>Intestinal-Parenteral nutrition. Oral or nasogastric catheter diets easy to prepare: use of commercial products, use of home-made food, diet with easy-to-use ingredients, parenteral nutrition (solution injection routes, nutrients for parenteral nutrition). Familiarity with artificial feeding methods and feeding routes.</p> <p>Research scientific literature for the nutritional treatment of various pathological cases.</p> <p>Use of special nutrition software for the evaluation of the diet.</p>		
Teaching methodology	<p>This course includes the use of p.point and audiovisual media and laboratory exercises. The laboratory exercises will be carried out mainly in the classroom and when necessary, homework will be assigned. Discussion and dialogue between teacher and students during the lesson will always be desirable.</p> <p>The laboratory part takes place in the Computers laboratory. Each group works on its own bench, under the supervision of the responsible teacher. All groups work on the</p>		

	same topic according to the teacher's instructions. The analysis of the dietary schemes prepared by the students is analyzed in detail in terms of their composition, with the help of special nutrition software in the Computers laboratory.
Bibliography	<ol style="list-style-type: none"> 1. Κλινική Διατροφή και Διαιτολογία με Στοιχεία Παθολογίας, Ζαμπέλας Α., Αθήνα, Ιατρικές Εκδόσεις Πασχαλίδη, 2011. ISBN13:9789604892938 2. Ανακαλύπτοντας τη Διατροφή, Insel P., Ross D., McMahon, Bernstein M., 2022, BROKEN HILL PUBLISHERS LTD 3. Nutrition in Clinical Practice, David L., et. al., Wolters Kluwer 4. MANUAL OF DIETETIC PRACTICE, Briony Thomas, Blackwell Publishing 2007 5. American Dietetic Association (ADA), Nutrition Care Manual, ADA, 2008. 6. European Journal of Clinical Nutrition
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	RESEARCH METHODOLOGY AND BIostatISTICS				
Course code	ΔΚΔ603				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / F' semester				
Teacher's name	Dr. Demetrios Ktistakis				
ECTS	6	Lectures / week	1 (1 hour)	Laboratories / week	1 (2 hours)
Course purpose and objectives	The aim of the course is to enable students to conduct scientific research in the field of health sciences. To acquire knowledge and familiarity with the design and execution of a research work, with the evaluation criteria of scientific articles and journals, with access to the scientific international bibliography of nutrition and dietetics and with the writing of a bibliographic and systematic review, meta-analysis, etc. and its presentation.				
Learning outcomes	<p>Upon completion of the course, the learner is expected to be able to:</p> <ul style="list-style-type: none"> - conducts scientific research in the field of health sciences. - collects data, interprets both quantitative and qualitative studies and understands scientific articles in the field of health sciences - understands and explains the results of systematic reviews in the field of health sciences 				

	- uses the SPSS program as an essential tool in health research		
Prerequisites	Bioinformatics	Required	None
Course content	<p>Ethics and Ethics in Research</p> <p>Literature review by searching multiple databases.</p> <p>Overview of the Research Process (scientific process steps).</p> <p>Planning a research paper.</p> <p>Evaluation criteria for articles, conferences and journals.</p> <p>Search engines for scientific articles.</p> <p>Structure of research paper, bibliographic and systematic review paper and meta-analysis paper.</p> <p>How to write a research paper, literature and systematic review paper and meta-analysis paper.</p> <p>How to present a research</p> <p>Sampling methods</p> <p>Data collection methods</p> <p>Quantitative and qualitative data analysis</p> <p>The role of biostatistics. Organization and description of statistics. Numerical Descriptive measures.</p> <p>Organization and description of statistics. Tables and Charts. Indicators of differentiation and homogeneity.</p> <p>Basic Laws of Probability. Set theory. Sample spaces, contingencies and probabilities.</p> <p>Probability Distributions of Discrete Variables. Random variables. Binomial probability distribution (Bernoulli). Poisson distribution. Probability Distributions of continuous random variables. Normal distribution. Standard normal distribution.</p> <p>LABORATORY</p> <p>Theoretical concepts are specialized in the context of a computer lab where students process and analyze data in the SPSS statistical package, so that by the end of the course they are able to process and present data and produce statistical results.</p> <p>Data input. Descriptive statistics. Applications with diagrams. Applications in Normal, Binomial and Poisson distribution. Applications in Polynomial distribution, χ^2 distribution, F distribution, t distribution. Applications for trust limits and case control. Applications in analysis of variance (ANOVA). Applications in simple linear regression and correlation.</p>		
Teaching methodology	The course will be held in the computers room. The course is conducted using power point and audio-visual media. Participation in class discussion is desired and sought by the course instructor. Comprehension exercises will also be used.		
Bibliography	<ol style="list-style-type: none"> 1. Μεθοδολογία της Έρευνας και της Ανάλυσης Δεδομένων για τις Επιστήμες της Υγείας , Παναγιωτάκος Δ, , Αθήνα, Εκδόσεις Β.Γ. Κωστάκη, 2006 		

	<p>2. Μεθοδολογία έρευνας στο χώρο της υγείας, Δαρβίρη Χριστίνα, Ιατρικές Εκδόσεις Π.Χ. Πασχαλίδης, 2009</p> <p>3. SPSS Programming and Data Management, 4th Edition A guide for SPSS and SAS users, Raynald Levesque and SPSS Inc., SPSS Inc.</p> <p>4. Fundamentals of biostatistics (8 th edition), Bernard Rosner, Boston: Brooks/Cole, Cengage Learning, 2015</p>
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	SPORTS, NUTRITION AND EXERCISE				
Course code	ΔΚΔ604				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / F' semester				
Teacher's name	Mikaella Nikolaou				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is to understand the effect of different forms of exercise on metabolism and the energy needs required during exercise. Knowledge of ergogenic aids and sports nutrition products. The understanding of the specialized diet for each sport and special situations of athletes.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Designs a diet plan based on the energy needs of an athlete or athlete. - Knows the correct combination of diet and exercise during the human life cycle (for example during pregnancy and at various ages). - Designs a diet for championships, during the various periods of sports preparation. - Understands the principle that proper nutrition combined with exercise leads to weight loss and human health. 				
Prerequisites	None	Required	None		
Course content	Metabolism of carbohydrates, fats and proteins in exercise. Regulation of the relative participation of carbohydrates, fats and proteins in energy production. The effect of intensity, type, and duration of exercise on the rate of use of energy sources				

	<p>The role and importance of vitamins, metals, minerals, in exercise and sports: Vitamins and minerals in sports activity</p> <p>Athlete needs for fluids and electrolytes - Hydrate balance: Thermoregulations and examples. Liquid and electrolyte balance. Factors affecting thermoregulation. Fluid replenishment during exercise. Choosing the right hydrating drink-Commercial solutions.</p> <p>Assessment of the nutritional status of athletes: Clinical examination and history. Blood tests. Biochemical markers in urine.</p> <p>Special nutritional needs of athletes. Training and biological adaptations: Sports training in perspective. Sports training models. Normal principles of training. Aerobic adaptations. Anaerobic adaptations.</p> <p>Evaluation of the use of nutritional supplements and ergogenic aids by athletes and athletes: Ergogenic aids. Chemicals - Pharmacological. Supplements that affect energy metabolism. Creatine. Carnitine. Sodium bicarbonate. Caffeine. Medium chain triglycerides.</p> <p>Supplements that increase muscle mass. Proteins and amino acids. Arginine, lysine, ornithine. Chromium. Supplements that contribute to improving health. Glutamine. Antioxidants. Diet foods.</p> <p>Eating Disorders in Athletes: Interest in achieving low body weight eg in dancers. Concern about weight gain eg in wrestlers.</p> <p>Nutrition in relation to the race: Nutrition before exercise. Glycogen loading. Promotional meal: Promotional dietary guidelines. Nutrition during the race: Sports drinks. Tips for eating bananas. Lunch after the race: Carbohydrate intake. Type of carbohydrates. Carbohydrate consumption time.</p> <p>Basic principles of fluid intake during exercise: Time of intake. Ideal composition. Osmoticity. Ideal fluid intake temperature. Convenient way to consume during a race.</p> <p>Diet and exercise for weight loss: When it is necessary to lose weight. How to set a goal in a weight loss effort. Exercise to treat obesity The effect of body weight and body composition on athletic performance. Separation of sports according to how body weight and body composition affect performance. Realistic goals and ideal weight loss rate for athletes. Increase muscle mass to maximize performance.</p> <p>Peculiarities for each sport and special situations: Overtraining - Nutritional intervention. Mass production of food for athletes. The vegetarian athlete. The diabetic athlete. Eating disorders and sports. Nutrition and body weight sports. Nutrition and team sports. Nutrition and racket sports. Diet and swimming. Diet and exercise. Diet and skiing. Diet and cycling.</p> <p>Factors affecting exercise: Effect of coffee. Effect of alcohol. Effects of androgens - anabolics and their side effects. Weight loss.</p> <p>LABORATORY</p> <p>Respiratory quotient - equivalent of calories of oxygen and carbon dioxide. Measurement of basal metabolism and exercise metabolism. Assessment of nutritional status of athletes. Fat measurement methods for athletes. Compilation of athletes' diet. Maintaining a competitive body weight. Diet design for sports with body weight categorization. Designing a diet for sports. Diet design for endurance sports. Diet planning for high-speed sports, Nutrition before, after and during the race.</p>
Teaching	The course will be conducted using audiovisual media. Pictures and videos will be

methodology	provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.
Bibliography	<ol style="list-style-type: none"> 1. Διατροφή στην Άσκηση και τη Σωματική Δραστηριότητα, McArdle William, 2017, BROKEN HILL PUBLISHERS LTD 2. Βασικές αρχές διατροφής αθλητών, Fred Brouns, ΠΑΡΙΣΙΑΝΟΥ Α.Ε 3. Growth, maturation and physical activity, R.M. Malinoi, C. Bouchard, Human Kinetics 4. Διατροφή και αθλητική απόδοση, Π.Κοντοπόδης, Παρισιανού 5. Advanced nutrition and human Metabolism, Saveens S. Gropper et al, Thomson
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	ETHICS OF A DIETITIAN NUTRITIONIST				
Course code	ΔΚΔ605				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	3 year / F' semester				
Teacher's name	Dr. Anastasia Perikkou				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The aim of the course is the acquisition of basic knowledge and awareness of the moral attitudes, values and rules of ethics that must govern professional behavior in daily practice, with the aim of upgrading, the smooth and efficient operation of institutions or workplaces and the achievement of high quality project for the benefit of society as a whole.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the professional rights and obligations of the Dietitian. - Knows the basic principles of medical ethics. - Knows the position of basic humanitarian values in the dietitian's profile. - Gain an in-depth opinion on issues that concern dietitians-nutritionists as well as society as a whole. 				

Prerequisites	None	Required	None
Course content	<p>Professional rights and obligations. Principles and rules of professional code of ethics. Social values.</p> <p>Relationships of the dietitian with health professions. The dietitian's relationship with the patient and the family environment.</p> <p>Medical ethics and ethics (medical confidentiality, record keeping, informing doctors, informed consent).</p> <p>Roles and function of members of the patient nutrition support team (coordination, composition, collaboration, means).</p> <p>Evaluation and improvement of nutritional care of patients. Relationship with medical institutions and companies.</p> <p>Activities and professional rights of hospital nutrition staff.</p> <p>Collaborate with other departments, such as other health professionals, food warehouses, kitchen staff and food distributors.</p> <p>The basic human values that nutritionists must control (responsibility, trust, communication, self-control, cooperation).</p> <p>Modern bioethical and professional ethics.</p>		
Teaching methodology	The course will be conducted using p.point and audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course.		
Bibliography	<ol style="list-style-type: none"> 1. Βασική Βιοηθική-Δεοντολογία-Νομοθεσία για Επαγγελματίες Υγείας, Ηγουμενίδης Μιχαήλ, 2020, BROKEN HILL PUBLISHERS LTD 2. Olivier Guillot: Προς ένα Ευρωπαϊκό κώδικα Ιατρικής δεοντολογίας. Ιατρικά θέματα, 1998. 3. Papagiannis A. Providing information: When, how and what to tell your patient. Student BMJ, 1998. 4. 3. American Dietetic Association: Code of ethics for the profession of Dietetics, JADA, 1999. 		
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>		
Language	Greek/English		

Course title	DIGITAL MARKETING
Course code	ΔΚΔ701
Course type	Compulsory

Level	Undergraduate				
Year / Semester	4 year / G' semester				
Teacher's name	Panayiotis Jacovides				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The objective of this course is for students to understand the strategic importance of digital marketing and to know how to apply practical knowledge in developing their business's identity, name and sales.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Learn the use and how to apply the different Tools for Digital Marketing - Understand Platform choice criteria and Strategy - Budgeting and Financial Analysis of Digital Marketing - Practically learn Marketing Management 				
Prerequisites	None	Required	None		
Course content	<p>Relevant Definitions backed-up by Practical Examples. History of Development of Digital Marketing. Examples of success and fail in DM strategy. Meaning and content of a marketing campaign. Communication basics and successful market information.</p> <p>The Digital Tools. Search Engine Optimization (SEO). Pay per click (PPc). Social Media Platforms. Websites. Email marketing. Content marketing. Mobile marketing</p> <p>Non-digital Tools. Affiliate Marketing. Campaigning. Off-the grid marketing</p> <p>Strategy. Choosing the right mix. Budgeting. Use and analyse through Key Performance Indicators (KPIs).</p> <p>Marketing Management.</p> <p>Follow-up of leads and campaigns.</p> <p>Build and run a 'Leads to Sales' Strategy and communication skills.</p>				
Teaching methodology	<p>The course will be conducted using audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.</p> <p>The laboratory part of the course is done in the body Aesthetics laboratory, which includes various physical exercise instruments, fat meters, skinfold calipers, instruments for measuring the basic metabolism, scales, instruments for determining the composition of the body, sphygmomanometers. In some cases, some complex instruments are suggested in the Computer by the responsible teacher.</p>				
Bibliography	<ol style="list-style-type: none"> 1. Ryan, D. (2014) Understanding Digital Marketing (3rd ed.) Kogan Page Chaffey, D. & Ellis-Chadwick, F. (2012). Digital Marketing: Strategy, Implementation and Practice (5th ed.). Pearson. 				

	<ol style="list-style-type: none"> 2. Rowles, D. (2014). Mobile Marketing: How Mobile Technology is Revolutionizing Marketing, Communications and Advertising. Kogan Page 3. Berry, M. & Sinisalu, H. (2015) The Best Of Global Digital Marketing Storybook 2. Best Marketing International 4. Solis, B (2013) What's the Future of Business?: Changing the Way Businesses Create Experiences, John Wiley 5. Journal of Strategic Marketing, Journal of Marketing, Harvard Business Review. Journal of Direct, Data and Digital Marketing Practice (Palgrave Macmillan)
Assessment	<ul style="list-style-type: none"> - Final examination: 60% - Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%
Language	Greek/English

Course title	EXERCISE PHYSIOLOGY – ERGOMETRY AND NUTRITION				
Course code	ΔΚΔ702				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	4 year / G' semester				
Teacher's name	Dr. Elpida Michael				
ECTS	6	Lectures / week	1 (2 hours)	Laboratories / week	1 (1 hour)
Course purpose and objectives	The aim of the course is for the student to understand the content of Ergometry and their important contribution to the design of various diets. In addition, to learn to use the results of ergometric assessments as a means of documenting the current state of health and performance as well as tools for drawing up diets and monitoring the course of nutritional interventions and exercise in healthy and sick individuals.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the importance of reliable measurements and the protocols of ergometric evaluations. - Estimates the work required for each physiological activity and adjusts his diet accordingly according to the needs required. - Understands that the proper collaboration of the dietician with the Ergometrist requires knowledge of the subject of Ergometry. - Understands the energy requirements for each work produced by the human body and to better plan its diet. 				

Prerequisites	None	Required	None
Course content	<p>Principles of ergometry. Relationship between diet, exercise and health.</p> <p>Methods of measurement, evaluation, tests: Measurement, Evaluation, Tests</p> <p>Determination of strength in athletes. Muscle work measurement: Units of measurement. Basic ergometers (Circulation ergometer, Floor ergometer, Step ergometer). Special ergometers.</p> <p>Heart rate measurement: Heart rate measurement. Measurement methods. Influence of factors. Blood pressure measurement. Measurement methods. Influence of factors.</p> <p>Ergospirometry: Calorimetry. Closed spirometry circuit. Open spirometry circuit. Maximum oxygen uptake. Measurement of VO₂.</p> <p>Prediction of maximal oxygen prevention, determination of aerobic capacity: Minimum occupational tests. Prediction with heart rate. Minimum cycloergometric tests. Minimum floor ergometric tests. Sub-maximum step ergometric procedures.</p> <p>Aerobic capacity tests: Road tests</p> <p>Fitness test kits: Fitness factors. Test kits.</p> <p>Measurement of maximum anaerobic lactic power. Nutrition and increase athletic performance. Organization of ergometric laboratory. Age exercise and cardiovascular health. Determination of energy balance.</p> <p>LABORATORY</p> <p>Practical application of the cyclohemeter. Equipment</p> <p>Practical application of the Floor Ergometer: Equipment</p> <p>Practical application of the Gauge. Equipment</p> <p>Practical applications of cardiac performance measurement: Measurement requirements. Environmental factor control protocol. Heart rate measurement</p> <p>Practical applications VO₂ max: Preparation of test. Laboratory conditions. Workmeter for VO₂ max. VO₂ max measurement under racing conditions.</p> <p>Practical applications of sub-maximum tests: Aerobic project competency test (factors, equipment, load selection, ergometry process, aerobic project calculation)</p>		
Teaching methodology	<p>The course will be conducted using audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.</p> <p>The laboratory part of the course is done in the body Aesthetics laboratory, which includes various physical exercise instruments, fat meters, skinfold calipers, instruments for measuring the basic metabolism, scales, instruments for determining the composition of the body, sphygmomanometers. In some cases, some complex instruments are suggested in the Computer by the responsible teacher.</p>		
Bibliography	<ol style="list-style-type: none"> 1. ΕΡΓΟΜΕΤΡΙΑ, Β. Κλεισούρα, εκδόσεις Συμμετρία 2. ΕΡΓΟΦΥΣΙΟΛΟΓΙΑ, Β. Κλεισούρα, εκδόσεις Συμμετρία 3. Η Θεωρία της Βασικής Γυμναστικής, Α.Γ. Βασιλόπουλος και Α.Ι. Ζουμπουρίδης, 		

	<p>Εκδόσεις ΤΕΛΕΘΡΙΟ</p> <p>4. Εισαγωγή στην ισοκινητική άσκηση , Π.β. Τσακλής</p> <p>5. Φυσιολογία της άσκησης και του αθλητισμού (τόμοι I και II), Jack H. Wilmore et al, Π.Χ. ΠΑΣΧΑΛΙΔΗΣ</p>
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	NUTRIGENETICS AND NUTRIGENOMICS				
Course code	ΔΚΔ703				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	4 year / G' semester				
Teacher's name	Dr. Artemis Elia				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	<p>The aim of the course is to highlight the importance of nutritional genetics and diatrogenomics for human health and specifically the interaction of nutrition with the genome as well as how diet and lifestyle affect gene expression. An additional goal is the acquisition of basic knowledge and skills to create specialized nutrition programs.</p>				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Knows the basic principles of nutrition genetics and nutrition genomics and understands the evolution they offer in the field of Nutrition and Dietetics for the formulation of personalized nutritional interventions. - Know the interactions between genes and nutrition in relation to human health and know how our diet, lifestyle and habits affect the expression of our genes. - Knows basic techniques and methods applied in nutritional genetics and nutritional genomics and to be able to assess the genetic predisposition for nutrition-dependent diseases. - Knows the legal and social implications of the application of nutritional genetics and nutritional genomics. 				
Prerequisites	MOLECULAR BIOLOGY AND GENETICS	Required	None		
Course content	Introduction to Nutritional Genetics and Nutritional Genomics. Explanation and				

	<p>comparison of the two concepts of nutritional genomics.</p> <p>Description of the molecular mechanisms of gene-nutrient interaction.</p> <p>Description of the molecular mechanisms of action of dietary components on the expression of the human genome.</p> <p>Interaction of lifestyle, diet and genome for better human health status through personalized nutrition.</p> <p>Interpretation of results of nutrition genetic nutrition genomics tests to determine genetic predisposition to diseases related to metabolism, such as diabetes mellitus, intolerances, celiac disease, deficiency of the G6PD enzyme, hypercholesterolemia, obesity, cardiovascular diseases, as well as with the assimilation of vitamins (vitamin A and D), trace elements (zinc, iron, selenium), nutrients (o-3 fatty acids, polyphenols) but also toxic (e.g. tobacco, alcohol) substances in the body.</p> <p>Description of techniques and methods used in food genetics and food genomics (eg polymerase chain reaction, DNA sequencing).</p> <p>Presentation of research and studies that highlight the importance and involvement of nutritional genetics and nutritional genomics in the modification of gene expression.</p> <p>Legal and social implications of nutrition genetics and nutrition genomics.</p>
Teaching methodology	The course is conducted using audiovisual media. Images and videos are provided to students when and where needed to further understand the key concepts of the course.
Bibliography	<ol style="list-style-type: none"> 1. Thompson and Thompson ιατρική γενετική, NUSSBAUM R., McINNES R.R., WILLARD H.F., 2011, BROKEN HILL PUBLISHERS LTD 2. Το DNA στο Πιάτο σου, Βαλεντίνη Κωνσταντινίδου, 2021, Εκδόσεις iWrite 3. Μοριακή Γενετική του Ανθρώπου, Γεώργιος Δεδούσης, 2021, ΥΤΟΡΙΑ ΕΚΔΟΣΕΙΣ Μ. ΕΠΕ. 4. Η επιγενετική επανάσταση, Νέσα Κάρει, 2015, ΧΑΡΙΤΟΣ ΧΡ. ΠΑΝΑΓΙΩΤΗΣ
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	INTERNSHIP I
Course code	ΔΚΔ704
Course type	Compulsory
Level	Undergraduate
Year / Semester	4 year / G' semester

Teacher's name	Constantina Jacovides			
ECTS	12	Lectures / week	-	Laboratories / week 2 (4 hours)
Course purpose and objectives	The internship aims at the possibility of applying the methods of Nutrition and Dietetics in practice. Students must be able to translate the theory they have been taught throughout their studies into practice in the workplace so that they can properly practice the profession of dietitian / nutritionist.			
Learning outcomes	The student should be able to make a correct and complete nutritional assessment and to make the appropriate nutritional treatment for the prevention and treatment / intervention of various physiological and pathological conditions in which nutrition plays an important role.			
Prerequisites	ΔΚΔ103, ΔΚΔ303, ΔΚΔ304, ΔΚΔ501, ΔΚΔ601, ΔΚΔ602	Required	None	
Course content	<p>Within the framework of the 4th year of the Department of Dietetics and Nutrition, students are required to carry out their practical training in various places such as schools, food industry, kindergartens, catering establishments as well as in a Dietitian/Nutritionist office. The students' theoretical education is called upon to be applied in practice in the form of observation for better assimilation and consolidation.</p> <p>The internship period is 13 weeks x 2 days x 4 hours.</p> <p>For each student, an academic member of the Faculty is appointed, who exercises supervision throughout the internship. The supervisor is the communication link between the School and the Employment Agency. More specifically, the supervisor: a) is informed (either by telephone or through a visit) on a regular basis from the employment agency and monitors the progress of the students he/she supervises b) checks the consistency of the students in their obligations and evaluates their participation in the Internship c) records possible problems that may have arisen during the Internship, either on the part of the supervisors in the cooperation bodies or on the part of the students.</p> <p>Upon completion of the Internship, the students are obliged to submit the tasks (diets, nutritional advice, dietary interventions) they have undertaken in writing to the person in charge. In addition, the student, as well as the person in charge of the Employment Agency, fills out a special evaluation form. The final responsibility for the evaluation of the students' Internship rests with the three-member Evaluation Committee, taking into account the evaluations of the supervisor, the person in charge at the employment agency and the student's work/presentations.</p>			
Teaching methodology	Internship in monitoring type workplaces. The students are obliged to submit in writing each time the work of all the incidents they undertake.			
Bibliography	<p>TLC Practice Guide</p> <p>Mary Width and Tonya Reinhard (2017). The Essential Pocket Guide for Clinical Nutrition.</p> <p>Yashime Motarjemi and Huub Lelieveld (2014) Food Safety Management, A Practical Guide for the Food Industry ISBN: 978-0-12-381504-0</p>			

	American Dietetic Association (ADA), Nutrition Care Manual, ADA, 2008. European Journal of Clinical Nutrition.
Assessment	Participation/Attendance: 50% Tasks (diets, dietary interventions, nutritional advices): 25% Presentation of work: 25%
Language	Greek/English

Course title	BIOTECHNOLOGY AND GENETIC ENGINEERING				
Course code	ΔΚΔ801				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	4 year / H' semester				
Teacher's name	Dr. Artemis Elia				
ECTS	6	Lectures / week	1 (3 hours)	Laboratories / week	-
Course purpose and objectives	The aim of the course is to acquire knowledge about the modern applications of biotechnology that contribute to improving the quality of human life. To know how to create genetically modified foods and transgenic organisms. In addition, it is the understanding of the importance of microorganisms/organisms, especially in their use in the context of biotechnological methods and genetics.				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Acquire the basic knowledge of recombinant DNA construction. - Understand the possibilities of solving nutritional problems of a rapidly growing population, with modern plant and animal production. - Knows about the applications of biotechnology in the environment and in energy matters. - Knows about biotechnological applications in the field of health such as gene therapy, assisted reproduction and personalized medicine. 				
Prerequisites	None	Required	None		
Course content	Introduction: The evolution of Biotechnology and the various fields, concepts and definitions.				

	<p>Microbial Biotechnology: Microorganisms and their culture conditions for the production of biomass or microbial products. The Microorganisms of Industrial Fermentations - Fungi, Yeasts, Bacteria. Fermented foods and products: production, properties and nutritional value. Alcoholic Fermentation and Lactic Fermentation</p> <p>Enzyme biotechnology: technology and applications. Biotechnology in the preparation and processing of food, their ingredients and their additives.</p> <p>Modern biotechnology: recombinant DNA, carriers of genetic material, cloning, genetic engineering - Genetically modified food.</p> <p>Food biotechnology: technology and applications.</p> <p>Plant biotechnology: technology and applications.</p> <p>Animal biotechnology: technology and applications.</p> <p>Main applications of biotechnology: production of antibiotics, vaccines, drugs, monoclonal antibodies, stem cell applications, gene therapy</p> <p>Biotechnology and bioethics.</p>
Teaching methodology	The course will be conducted using audiovisual media. Pictures and videos will be provided to students when and where needed for further understanding of the basic concepts of each course. Participation for class discussion is desirable and will be sought by the course teacher.
Bibliography	<ol style="list-style-type: none"> 1. Βιοτεχνολογία - Βασικές Αρχές και Εφαρμογές, Renneberg Reinhard, Berkling Viola, Loroch Vanya, Süßbier Darja, Broken Hill Publishers Ltd 2. Εισαγωγή στη Βιοτεχνολογία, Thieman William J., Palladino Michael A., Broken Hill Publishers Ltd 3. Basic Biotechnology, Colin Ratiedge, Cambridge 4. Σκούρας, Ζ. 1997. Ειδικά Θέματα Γενετικής - Γενετική Μηχανική. Έκδοση: Υπηρεσία Δημοσιευμάτων Α.Π.Θ. 5. Watson, J., Myers, R.M., Caudy, A.A., Witkowski, J.A. 2007. Ανασυνδυασμένο DNA - Γονίδια και γονιδιώματα. Ακαδημαϊκές εκδόσεις Ι. Μπάσδρα & ΣΙΑ, Αλεξανδρούπολη.
Assessment	<p>- Final examination: 60%</p> <p>- Mid-term evaluation (mid-term exam, exercises, assignment / presentation): 40%</p>
Language	Greek/English

Course title	INTERNSHIP II
Course code	ΔΚΔ802

Course type	Compulsory				
Level	Undergraduate				
Year / Semester	4 year / H' semester				
Teacher's name	Constantina Jacovides				
ECTS	12	Lectures / week	-	Laboratories / week	2 (4 hours)
Course purpose and objectives	The internship aims at the possibility of applying the methods of Nutrition and Dietetics in practice. Students must be able to translate the theory they have been taught throughout their studies into practice in the workplace so that they can properly practice the profession of dietitian / nutritionist.				
Learning outcomes	The student should be able to make a correct and complete nutritional assessment and to make the appropriate nutritional treatment for the prevention and treatment / intervention of various physiological and pathological conditions in which nutrition plays an important role.				
Prerequisites	ΔΚΔ103, ΔΚΔ303, ΔΚΔ304, ΔΚΔ501, ΔΚΔ601, ΔΚΔ602		Required	None	
Course content	<p>Within the framework of the 4th year of the Department of Dietetics and Nutrition, students are required to carry out their practical training in various clinical places such as nursing homes, hospitals, health centres, private clinics and rehabilitation centres with registered dietitian. The students' theoretical education is called upon to be applied in practice in the form of observation for better assimilation and consolidation.</p> <p>The internship period is 13 weeks x 2 days x 4 hours.</p> <p>For each student, an academic member of the Faculty is appointed, who exercises supervision throughout the internship. The supervisor is the communication link between the School and the Employment Agency. More specifically, the supervisor: a) is informed (either by telephone or through a visit) on a regular basis from the employment agency and monitors the progress of the students he/she supervises b) checks the consistency of the students in their obligations and evaluates their participation in the Internship c) records possible problems that may have arisen during the Internship, either on the part of the supervisors in the cooperation bodies or on the part of the students.</p> <p>Upon completion of the Internship, the students are obliged to submit the tasks (diets, nutritional advice, dietary interventions) they have undertaken in writing to the person in charge. In addition, the student, as well as the person in charge of the Employment Agency, fills out a special evaluation form. The final responsibility for the evaluation of the students' Internship rests with the three-member Evaluation Committee, taking into account the evaluations of the supervisor, the person in charge at the employment agency and the student's work/presentations.</p>				
Teaching methodology	Internship in monitoring type workplaces. The students are obliged to submit in writing each time the work of all the incidents they undertake.				

Bibliography	<p>TLC Practice Guide</p> <p>Mary Width and Tonya Reinhard (2017). The Essential Pocket Guide for Clinical Nutrition.</p> <p>Yashime Motarjemi and Huub Lelieveld (2014) Food Safety Management, A Practical Guide for the Food Industry ISBN: 978-0-12-381504-0</p> <p>American Dietetic Association (ADA), Nutrition Care Manual, ADA, 2008.</p> <p>European Journal of Clinical Nutrition.</p>
Assessment	<p>Participation/Attendance: 50%</p> <p>Tasks (diets, dietary interventions, nutritional advices): 25%</p> <p>Presentation of work: 25%</p>
Language	Greek/English

Course title	THESIS				
Course code	ΔΚΔ803				
Course type	Compulsory				
Level	Undergraduate				
Year / Semester	4 year / H' semester				
Teacher's name	All teachers				
ECTS	12	Lectures / week	-	Laboratories / week	-
Course purpose and objectives	<p>The aim of the course is to provide all the necessary knowledge, supplies and tools for planning, organizing, collecting information and preparing a scientific study with a mainly statistical nature in the field of Dietetics and Nutrition and its analysis, documentation and presentation. In addition, the goal is to complete the writing of the scientific project and support it through an oral presentation, under the constant guidance and supervision of the supervising professor, to a three-member Evaluation Committee.</p>				
Learning outcomes	<p>Upon completion of the course, the learner will be able to:</p> <ul style="list-style-type: none"> - Studies a subject in depth and approaches it in the terms of scientific research having studied the existing and appropriate theories related to it, as well as the data in the field 				

	<p>of international research, in a critical manner.</p> <ul style="list-style-type: none"> - Asks questions and identifies problematic areas of knowledge and the reality under study, which need answers, as well as chooses and applies research principles and methods to answer the questions they formulate or their respective hypotheses, using the appropriate tools of scientific investigation , - Organizes, analyses, correlates and synthesizes partial knowledge, concepts and theoretical schemes that exist scattered in the literature and to build new knowledge with meaning. - Contributes with the findings and conclusions of his study, to the further understanding of certain aspects of the educational and learning process, as well as to the production of knowledge. 		
Prerequisites	<p>Research Methodology and Biostatistics.</p> <p>To have successfully completed ¾ of the courses.</p>	Required	None
Course content	<p>The students attend a certain number of lectures that include the planning and preparation of the research program, the critical study of the relevant literature, the preparation of the case and the research proposal, the organization and collection of data for the purpose of the research, the statistical analysis and interpretation of the data, research writing and research communication and dissemination.</p> <p>A detailed description of the content and the evaluation method of the Graduate Thesis is included in the Guide for Preparing the Graduate Thesis.</p> <p>Under the guidance of the supervisor, the students choose the subject of their thesis, search for valid and recent scientific literature and prepare their research proposal. Coaching takes place on a regular weekly basis where meetings are held between the student and the supervisor.</p> <p>After the writing of the thesis is completed and the student adequately supports his/her research proposal both orally and in writing, then the date of the presentation of the student's work is determined which takes place at the Faculty and consists of a Three-Member Committee. The committee grades the Bachelor's Thesis, depending on its quality characteristics, which concern both the content of its chapters and its scientific adequacy, as a whole. The Bachelor's Thesis in its latest version, once it has been evaluated and corrected, possibly in accordance with the comments of the Examining Committee, is submitted in paper and electronic form to the School's Secretariat and is kept in the Institution's Library.</p>		
Teaching methodology	Lectures, class discussion and one-on-one meetings of the student with the supervising professor on a regular weekly basis.		
Bibliography	Thesis Preparation Guide		
Assessment	<p>Thesis structure: 20%</p> <p>Topic completeness: 30%</p> <p>Oral support - Presentation of work: 30%</p> <p>Documentation: 20%</p>		

Language	Greek/English
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