

COURSE OF STUDY: PHARMACY
ACADEMIC YEAR: 2023-2024
ACADEMIC SUBJECT: FOOD AND DIETETIC PRODUCTS

General information	
Year of the course	2nd
Academic calendar (starting and ending date)	Feb-June 2024
Credits (CFU/ETCS):	7
SSD	CHIM/08-10
Language	Italian
Mode of attendance	Mandatory

Professor/ Lecturer (A-E)	
Name and Surname	Filomena Corbo
E-mail	filomena.corbo@uniba.it
Telephone	0805442731
Department and address	Dipartimento di Farmacia-Scienze del Farmaco
Virtual room	Teams code: c06akv
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Everyday (mon-fri) by appointment via email

Professor/ Lecturer (F-N)	
Name and Surname	Luca Piemontese
E-mail	luca.piemontese@uniba.it
Telephone	0805442232
Department and address	Dipartimento di Farmacia-Scienze del Farmaco
Virtual room	Teams code: uxyskvq
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Everyday (mon-fri) by appointment via email

Professor/ Lecturer (O-Z)	
Name and Surname	Luca Piemontese
E-mail	luca.piemontese@uniba.it
Telephone	0805442232
Department and address	Dipartimento di Farmacia-Scienze del Farmaco
Virtual room	Teams code: uxyskvq
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Everyday (mon-fri) by appointment via email

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
175	50	20	105

CFU/ETCS			
7	5	2	

Learning Objectives	Essential foundations of the chemistry of foods and simple nutrients, also taking into consideration the dietary and health aspects of food products indicated for individuals affected by nutritional diseases or undergoing particular dietary regimens. The aetiological and nutritional aspects of dysfunctions are outlined, as well as the chemical properties, legislative aspects, product-related and operative instructions for raw materials and finished products.
Course prerequisites	Basic knowledge of General and Inorganic Chemistry, Organic Chemistry and Biochemistry.

Teaching strategies	Lectures and exercises aided by slides provided by the teacher.
Expected learning outcomes in terms of	Capability to carry out professional work in the food sector, especially regarding dietary products for specific groups of patients/consumers. Capability to carry out consultation work regarding functional foods and dietary supplements through knowledge of plant products for special nutritional needs, of their nutritional functions and of the end goal of their intended use.
Knowledge and understanding on:	<ul style="list-style-type: none"> o Macro and micronutrients constituting food products. o Main chemical transformations of macronutrients.
Applying knowledge and understanding on:	<ul style="list-style-type: none"> o Recognizing the health and nutritional features of food products from an evaluation of their composition.
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> o Drawing chemical structures of food constituents; o Prediction of how nutrients may be transformed. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> o Appropriate use of chemical jargon regarding food products. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> o Reading English language scientific papers regarding course topics. o Making correlations between the chemical nutritional features of food products to their specific use.
Syllabus	
Content knowledge	<ul style="list-style-type: none"> - Foods, nutraceuticals and functional foods: definitions and classification. - Macronutrients. <ul style="list-style-type: none"> Carbohydrates. Monosaccharides, disaccharides and polysaccharides of nutritional interest. Starches. Dietary fiber. Sweeteners. Carbohydrate based foods. Lipids. Essential fatty acids: PUFA. Lecithins. Conjugated linolenic acids. Stability and degradation. ALE (advanced lipoperoxidation endproducts). Antioxidants. Lipid based foods. Amino acids and proteins. Stability. Biological value of proteins. Endogenous amino acids and proteins with antioxidant and detoxifying action and from food sources (carnitine, nutraceuticals from liliaceae and isothiocyanates from cruciferous trees). Transformations with heating and cooking (Maillard reaction). AGE (advanced glycation endproducts). Protein based foods. - Micronutrients. <ul style="list-style-type: none"> Liposoluble vitamins. Vitamins A, carotenoids, lycopene. Vitamins D (steroids: classification and nomenclature; provitamins and bioactivation). Phytosterols. Tocopherols and tocotrienols. Vitamins K.

	<p>Water-soluble vitamins. Complex B. Pantothenic acid. Biotin. Vitamin C.</p> <ul style="list-style-type: none"> - Phenols and polyphenols. Phenols, catechins, resveratrol, bioflavonoids, anthocyanins, isoflavones. Cocoa. Nervine drinks (tea, coffee). Alcoholic beverages. - Novel foods. - Food alteration, contaminant sources and main preservation strategies. - Probiotics, prebiotics, synbiotics. - Dietetic products. <p>Direct foods for special medical purposes; Milks for early childhood; Food for celiacs; foods for chronic renal failure patients; Foods for metabolic diseases patients; Lactose-free foods. Food supplements.</p> <p>Hands on: in-depth studies of topics described above.</p> <p>The order in which the scheduled topics will be taught may vary depending on the lecturer holding the course.</p>
Texts and readings	<p>Mannina L; Daglia M.; Ritieni A. "La chimica e gli alimenti: nutrienti e aspetti nutraceutici" Ed CEA Casa editrice Ambrosiana;</p> <p>Cappelli, P.; Vannucchi, V. "Principi di chimica degli alimenti". Ed. Zanichelli (Bologna);</p> <p>Evangelisti, Restani. Prodotti Dietetici – Chimica, Tecnologia ed Impiego. Ed Piccin.</p>
Notes, additional materials	Slides
Repository	The recommended texts can be found for consultation in the Library located in the department. Some of the teaching material could be reposted on the dedicated Teams classes.

Assessment	
Assessment methods	Oral exam on the topics covered by the course
Assessment criteria	<ul style="list-style-type: none"> • Knowledge and understanding: <ul style="list-style-type: none"> o Description of food contents o Analysis of possible food transformations • Applying knowledge and understanding: <ul style="list-style-type: none"> o contextualization of the course's topics referred to personal academic career • Autonomy of judgment: <ul style="list-style-type: none"> o correlation of food composition with nutritional and health properties o variations of food content upon chemical transformations o personal study of covered topics • Communication skills: <ul style="list-style-type: none"> o clarity of presentation o use of appropriate terminology • Capacities to continue learning: <ul style="list-style-type: none"> o food contents and nutritional, health and toxicological properties
Final exam and grading criteria	Students will be assessed through an oral test on the topics covered in the program, aimed at verifying the effective ability to organize the notions learned, paying particular attention to the ability to critically reason on the study carried out. The quality, effectiveness, linearity of the exposure, and the use of a correct specialized vocabulary will also be evaluated. The student will pass the exam with a mark of 18/30, at least.
Further information	