



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2023/2024		
MASTER'S DEGREE (MSC)	PHARMACY		
INTEGRATED COURSE	GENERAL AND NUTRITION PHYSIOLOGY - INTEGRATED COURSE		
CODE	23360		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	BIO/09		
HEAD PROFESSOR(S)	BALDASSANO SARA	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)	BALDASSANO SARA	Professore Associato	Univ. di PALERMO
	AMATO ANTONELLA	Professore Associato	Univ. di PALERMO
CREDITS	12		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<p>AMATO ANTONELLA Monday 14:30 16:00 Presso studio docente, stanza 506, Dpt STEBICEF Edificio 16-Viale delle Scienze, preferibilmente con conferma incontro via email: antonella.amato@unipa.it</p> <p>BALDASSANO SARA Monday 10:00 11:00 SI RICEVE TUTTI I GIORNI PER APPUNTAMENTO da concordare con il docente via email. Studio n 507, Dip. STEBICEF, viale delle Scienze, Ed. 16, piano 1 o via teams- codice canale emzcza3.</p>		

DOCENTE: Prof.ssa SARA BALDASSANO

PREREQUISITES	Knowledge of Biochemistry concerning: a) the structure of the major organic compounds (proteins, carbohydrates, fats); b) the notion of "enzyme"; c) the possible mechanisms of regulation of the enzymes; d) the main metabolic processes.
LEARNING OUTCOMES	Knowledge and understanding: acquisition of advanced knowledge on the functioning of organs and systems, as targets of the action of drugs and on the role of nutrition and dietary supplementation in the well-being of the organism. Ability to understand the specific language of these disciplines. Ability to apply knowledge and understanding: ability to use the knowledge acquired in order to study the mechanisms of action of drugs in the various organs and systems and to avoid diseases caused by deficiency and excess nutrition. Making judgments: being able to evaluate the implications and results of studies aimed at clarifying the functioning of organs and systems, the composition of foods, the relationships between pathologies and nutrition. Communication skills: ability to use the language of Physiology, necessary to interact with other health professions, but also to illustrate the concepts of Physiology and Physiology of nutrition to a non-expert audience. Learning skills: ability to update with the consultation of scientific publications specific to the sector, in order to avoid the obsolescence of acquired skills. Ability to follow, using the knowledge acquired during the curricular course, both second level masters and seminars and in-depth courses in the field of general physiology and nutrition
ASSESSMENT METHODS	Oral exam. The candidate must answer at least three questions orally asked, about all issues of the program, with reference to the suggested textbooks and provided teaching equipment. The exam aims to assess whether the student has knowledge and understanding of the topics, has interpretative competence and ability to establish connections between the topics of the course. The sufficiency is reached when the student shows knowledge and understanding of the subjects at least in general terms; also, must be able to explain and argue to convey his knowledge to the examiner. Below this threshold, the examination result insufficient. On the contrary, the more the student, arguing and explaining, is able to interact with the examiner, and his knowledge of the subject is detailed, the more the evaluation will be positive. 30/30 cum laude. Excellent knowledge of the topics, excellent language skills, good analytical capacity; the student is able to apply knowledge to solve posed problems. 26/29. Good mastery of the subjects, full language skills; the student is able to apply knowledge to solve posed problems. 24/25. Basic knowledge of the main topics, moderate language skills; the student has a limited ability to apply knowledge to solve posed problems. 21/23. The student does not have full mastery of the main topics, but he has adequate knowledge; the property language is satisfactory; the student has a poor ability to apply knowledge to solve posed problems. 18/20. Minimal basic knowledge of the main topics and technical language; very little or no ability to apply knowledge to solve posed problems. Insufficient. He does not have an acceptable knowledge of the contents of the topics.
TEACHING METHODS	Classroom lessons

**MODULE
PHYSIOLOGY OF NUTRITION**

Prof.ssa ANTONELLA AMATO

SUGGESTED BIBLIOGRAPHY

Alimentazione, Nutrizione e salute. Debellis-Poli EdiSes. ISBN 9788833190518

Le basi molecolari della nutrizione. Giuseppe Arienti – Piccin. ISBN 978-88-299-2698-5

AMBIT	74748-Attività formative affini o integrative
INDIVIDUAL STUDY (Hrs)	68
COURSE ACTIVITY (Hrs)	32

EDUCATIONAL OBJECTIVES OF THE MODULE

The course provides basic knowledge on nutrition, nutritional status and energy requirement with the relative methods of measurement. Also the concept of balanced diet, in consideration of the nutritional characteristics of the main foods and nutrients will be covered. Particular attention will be given to the gastrointestinal physiology including the mechanisms by which digestive functions are regulated. The one-to-one interaction between drugs and nutrients will be also discussed.

SYLLABUS

Hrs	Frontal teaching
6	Valuation of nutritional status. Energy Expenditure and energy requirements. Basal Metabolic Rate, Metabolism during Exercise.
6	Nutrients: Carbohydrates, Lipids and proteins. - Water and minerals - Vitamins
4	Animal Foods Milk and derivatives. Meat. Eggs. Vegetable foods: Cereals and derivatives; Vegetables. Fruit. Oil and Fats
4	Balanced diet and Adequate Diet definition. Nutrition in Adulthood and in the elderly, Nutrition in Infancy and Adolescence, Nutrition for Pregnancy and Lactation; Nutrition and sport
8	Digestive system anatomy. Mechanical and chemical digestion. Gastrointestinal secretions: salivary secretion, gastric secretion, pancreatic secretion, biliary secretion and intestinal secretion. Control of secretion and motility. Gastric motility and peristaltic movements. Digestion and Absorption of Carbohydrates, Lipids and proteins
4	Drug-nutrient interactions

**MODULE
GENERAL PHYSIOLOGY**

Prof.ssa SARA BALDASSANO

SUGGESTED BIBLIOGRAPHY

-Carbone E, Aicardi G, Maggi R: "Fisiologia – dalle molecole ai sistemi integrati" – Ed. EdiSES. ISBN 9788879599795 - Taglietti **FONDAMENTI DI FISIOLOGIA GENERALE E INTEGRATA**. Edises 2019 ISBN 8833190528 -BERNE&LEVY **FISIOLOGIA** viii edizione casa editrice Ambrosiana. ISBN 9788808480040 Materiale didattico (files delle lezioni inserite nel portale)

AMBIT	74742-Discipline biologiche
INDIVIDUAL STUDY (Hrs)	136
COURSE ACTIVITY (Hrs)	64

EDUCATIONAL OBJECTIVES OF THE MODULE

The student will address the study of various organs and systems, considering their functioning key mechanisms, emphasizing above all the arguments of General Physiology more useful for the study of Pharmacology, and in any case, for knowledge must possess a graduate in Pharmacy

SYLLABUS

Hrs	Frontal teaching
3	CELLULAR ORGANIZATION OF LIVING AND HOMEOSTASIS. The importance of regulation in vital processes. The internal environment of the living and its regulation. The concept of homeostasis. Homeostatic principles and mechanisms - Integration systems (Nervous, endocrine and neuroendocrine messages). Exchanges between cell and environment. Membrane transports.
2	Blood physiology: generality; The plasma; Red blood cells; White blood cells; Platelets and hemostasis
16	Nervous system physiology: introduction; Cell excitability; Excitability and conductivity of nerve fibers; Synapses; Sensory systems and receptors; The somatosensory system; The visual system; Reflexes; Brain motor cortex; The basal ganglia; The vegetative nervous system; Functions of the hypothalamus; The cerebral cortex; Emotions
5	Muscle tissue: skeletal muscle tissue; smooth muscle tissue
15	Endocrine system and reproduction: General information; hypothalamus, pituitary gland, pineal gland; the thyroid; metabolism of calcium and phosphorus; the adrenal cortex; the endocrine pancreas; sexual reproduction
9	Cardiovascular system. Heart: General information; electrical activity; mechanical activity; Regulation of cardiac activity. Circulation: General information; the arteries; arterioles; the capillaries; the veins; the vasomotility. Control of the cardiovascular system. The coronary circulation
4	Respiratory system: General information; respiratory mechanics; gas exchange; Regulation of respiration
5	Excretory apparatus: General information and functional organization; Glomerular filtration; proximal tubule functions; functions of the loop of Henle; distal tubule functions; functions of collecting ducts. The body fluids. Endocrine functions of the kidney
5	Digestive system: The functions of the digestive system. General aspects of mechanical and chemical digestion of food. Intestinal absorption. The gastrointestinal hormones.