



# UNIVERSITÀ DEGLI STUDI DI PALERMO

<b>DEPARTMENT</b>	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
<b>ACADEMIC YEAR</b>	2016/2017		
<b>MASTER'S DEGREE (MSC)</b>	MOLECULAR AND HEALTH BIOLOGY		
<b>INTEGRATED COURSE</b>	PHYSIOLOGY OF NUTRITION AND EATING BEHAVIOUR - INTEGRATED COURSE		
<b>CODE</b>	17013		
<b>MODULES</b>	Yes		
<b>NUMBER OF MODULES</b>	2		
<b>SCIENTIFIC SECTOR(S)</b>	BIO/09		
<b>HEAD PROFESSOR(S)</b>	AMATO ANTONELLA	Professore Associato	Univ. di PALERMO
<b>OTHER PROFESSOR(S)</b>	BALDASSANO SARA	Professore Associato	Univ. di PALERMO
	AMATO ANTONELLA	Professore Associato	Univ. di PALERMO
<b>CREDITS</b>	9		
<b>PROPAEDEUTICAL SUBJECTS</b>			
<b>MUTUALIZATION</b>			
<b>YEAR</b>	2		
<b>TERM (SEMESTER)</b>	1° semester		
<b>ATTENDANCE</b>	Mandatory		
<b>EVALUATION</b>	Out of 30		
<b>TEACHER OFFICE HOURS</b>	<p><b>AMATO ANTONELLA</b> 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><b>BALDASSANO SARA</b> Saturday 0:00 1:00 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 emzca3.</p>		

**DOCENTE:** Prof.ssa ANTONELLA AMATO

<b>PREREQUISITES</b>	Basic knowledge of biochemistry, anatomy and human physiology.
<b>LEARNING OUTCOMES</b>	<p>Knowledge and understanding: knowledge of the human gastrointestinal physiology and its main control mechanisms, notions on essential nutrients functions and mechanisms controlling eating behavior. These nutrition concepts will allow to understand the relationship between balanced diet and wellness, and can be applied to malnourished patients care.</p> <p>Applying knowledge and understanding: Ability to recognize the most common nutritional disorders, and ability to perform nutritional planes to prevent or revert malnutrition-related disorders.</p> <p>Making judgements: ability to provide nutritional assessment, mainly in clinical setting, to identify an appropriate nutritional intervention supporting patient's recovery.</p> <p>Communication: Ability to communicate clearly through a properly language the main concepts of the physiology of nutrition especially those to apply in clinical setting.</p> <p>Lifelong learning skills: Ability to update the knowledge in physiology of nutrition and in malnutrition-related disease, referring to the literature of the clinical field.</p>
<b>ASSESSMENT METHODS</b>	The final test consists of an oral exam with a grading system ranging from 18/30 to 30/30 cum laude. It will be evaluate the answers to three questions from the 6 CFU module and the answers to two questions from the 3 CFU module. Top marks will be reached when the student will have shown great retention of knowledge, deep understanding and high language skills. Less knowledge of the topics and lower capability to present acquisitive knowledge will be proportionally evaluated less positively. Pass mark will be assigned when the student demonstrates acceptable knowledge and understanding of the topics and minimal ability to present acquisitive knowledge.
<b>TEACHING METHODS</b>	Lectures with some pauses during the course to verify acquired concepts or for practical lessons.

**MODULE  
PHYSIOLOGY OF NUTRITION**

*Prof.ssa ANTONELLA AMATO*

**SUGGESTED BIBLIOGRAPHY**

Alimentazione e nutrizione umana. Costantini-Cannella. Il pensiero Scientifico Editore.  
 Fondamenti di Scienza dell'alimentazione. La Guardia M., Giammanco S., Giammanco. M. – EDISES.  
 Manuale di nutrizione clinica e scienze dietetiche applicate. Binetti P., Marcelli M., Baisi R.- Societa' Editrice Universo  
 Fisiologia Un approccio integrato. 5° edizione Silverthorn-CEA.

<b>AMBIT</b>	50505-Discipline del settore biomedico
<b>INDIVIDUAL STUDY (Hrs)</b>	102
<b>COURSE ACTIVITY (Hrs)</b>	48

**EDUCATIONAL OBJECTIVES OF THE MODULE**

The aim of this course is to impart knowledge about the importance of an adequate nutrition for wellness. To this purpose knowledges on the main nutrient functions and meaning of nutritional status in both physiological condition or in malnutrition-related diseases will be provided. Particular attention will be paid to the digestion and absorption process of food and to the regulation and cellular mechanisms involved in these process.

**SYLLABUS**

Hrs	Frontal teaching
8	Eating behavior and dietary habits. Assessment of nutritional status in individuals and populations. Biochemical Evaluation and Anthropometric Measurements. Energy Expenditure and energy requirements. Basal Metabolic Rate, Metabolism during Exercise. Methods for the assessment of energy expenditure: direct and indirect calorimetry.
8	Classification of foods into groups according to their nutrients and differentiated functions. Essential nutrients. Carbohydrates, Lipids and proteins. - Water and minerals - Vitamins
8	Food of animal origin: Milk and derivatives. Meat. Eggs. Vegetable food: Cereals and derivatives; Vegetables. Fruit. Oil and Fats
4	Functional foods, "Novel foods", Genetically Modified Foods
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
12	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. Mastication, gastric motility, peristaltic movements. Digestion and Absorption of Carbohydrates, Lipids and proteins.
Hrs	Practice
2	practice of anthropometric measurements in human subjects
2	nutritional therapy practices by specific software

**MODULE  
EATING BEHAVIOUR**

*Prof.ssa SARA BALDASSANO*

**SUGGESTED BIBLIOGRAPHY**

Alimentazione e nutrizione umana. Costantini-Cannella-Il pensiero Scientifico Editore  
Fisiologia Medica. Fiorenzo Conti. Edi-Ermes.

<b>AMBIT</b>	20879-Attività formative affini o integrative
<b>INDIVIDUAL STUDY (Hrs)</b>	51
<b>COURSE ACTIVITY (Hrs)</b>	24

**EDUCATIONAL OBJECTIVES OF THE MODULE**

The course provides an in-depth knowledge of the mechanisms controlling eating behavior focusing in particular on the endocrine regulation. Particular attention will be given to the study of pathophysiological mechanisms of malnutrition and/or associated diseases. To achieve these objectives, the student need to know advanced biochemistry, cytology and histology and physiology.

**SYLLABUS**

<b>Hrs</b>	<b>Frontal teaching</b>
15	Regulation of food intake: central and peripheral mechanisms. Hypothalamus: Structural and functional organization. Hormones that influence food intake. Focus on NPY, GLP-1, GLP-2, Ghrelin. adipose tissue and regulation of energy balance. Focus on Adipokines. Socio-cultural influences on eating behavior.
3	Malnutrition and associated diseases. Factors involved in the maintenance of body weight. Diabetes, obesity, lipid disorders, cancers. Nutrition and longevity.
6	The eating disorders (DCA) Classification. Malnutrition. Anorexia and bulimia. Prevention and diet in DCA. Refeeding syndrome.