

General Information	
Academic subject	Human Nutrition (I.C. Food chemistry and integrated nutrition; Instrumental analysis for food quality)
Degree course	Alimentary Science and Technologies (LM70)
ECTS credits	3 ECTS
Compulsory attendance	No
Teaching language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Marianna Ranieri	marianna.ranieri@uniba.it	BIO/09

ECTS credits details		
Basic teaching activities	2ECTS Lectures	1 ECTS Laboratory or field classes

Class schedule	
Period	I semester
Course year	Second
Type of class	Lectures, workshops

Time management	
Hours	75
In-class study hours	30
Out-of-class study hours	45

Academic calendar	
Class begins	September 27 th , 2021
Class ends	January 21 st , 2022

Syllabus	
Prerequisites/requirements	Knowledge of human anatomy, general, inorganic and organic chemistry. Knowledge of food constituents. Basic biology knowledge.
Expected learning outcomes	<p><i>Knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Knowledge of the principles of human nutrition and the digestive system in its features and functions <p><i>Applying knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to assess food consumption and nutritional errors ○ Capacity to evaluate human nutritional requirements ○ Ability to assess the relationship between nutrition and health ○ Ability to evaluate the relationships between food behavior and marketing <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> ○ The ability to correctly orientate the search for suitable solutions to change the food style ○ The ability to correctly orient the choice of food based on quality and health issues (celiac disease, intolerance and c.) <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> ○ Ability to describe the characteristics and functions of the various organs of the gastrointestinal tract in digestion and absorption ○ Ability to describe the various biological causes underlying a food pathology ○ Ability to describe the catabolic, anabolic and functional role of macro and micronutrients <p><i>Capacities to continue learning</i></p>

	<ul style="list-style-type: none"> ○ Ability to deepen and update their knowledge of nutrition and nutrition <p>The expected learning outcomes in terms of knowledge and skills are listed in Annex A of the Master's Degree Program in the Master's Degree Program (expressed through the European Degree Program descriptions)</p>
Contents	<p><u>Alimentation and Nutrition</u>: characteristics and roles in the various stages of life. Energy, entropy and homeostasis. Cellular and molecular turnover. Nutrient availability and energy storage. Anthropological relationship between man and food. Sensory perception of taste and smell. The role of learning and memory in the conditioning of feeding behaviour and influence on marketing.</p> <p><u>Nutrients</u>: Recalls on: Biomolecules and their catabolic, anabolic and functional characteristics; Relations with the biomolecular composition of the human body; Bioavailability, essentiality, biological and chemical nutrient value. Functional foods and nutraceuticals. Nutrigenomics.</p> <p><u>Physiology of gastro-intestinal system</u>. Functions of the digestive system. Relationships between chemical characteristics of foods and nutrients and structural and functional peculiarities of the gut organs in digestion, absorption and distribution of nutrients. Characteristics and roles of the intestinal microbiota.</p> <p><u>Omeostasis and alimentary behaviour and its regulation</u>: Recalls on: Long- and shor-term controls; Hypothalamic nuclei; Neuroendocrine control; Alteration of alimentary behaviour.</p> <p><u>Energetic and dietetic</u>: Expenditure and energy needs. Basal metabolic rate and energy. Body mass index. Body constitution and relationships with energy requirements. Calorimetric and analytical evaluation of energy needs. Caloric food content and quantitative ratio of energetic nutrients in the diet. Level of recommended dietary allowance (RDA): meaning, quality and quantity. Relationships between diet, body weight, body composition and healthiness.</p> <p><u>Adverse reaction to food</u>: Intoxication (DL50, NOEL, RML) Toxins (bacterial, animal, vegetal, atrophic). Alimentary allergy (milk, eggs, etc.) Alimentary intolerance (lactose, fructose, gluten, phenylalanine, favismus). Guidelines about diagnosis of food allergies and intolerances.</p>
Course program	
Reference books	<ul style="list-style-type: none"> • Notes from lectures and educational materials distributed during the course • “FISIOLOGIA dalle molecole ai sistemi integrati” Carbone, Cicirata, Aicardi - Editrice EdiSES • “Principi di chimica degli alimenti” P. Cappelli, V. Vannucchi - Zanichelli ed. • “Alimentazione, Nutrizione e Salute” Debellis L, Poli A. - EdiSES
Notes	
Teaching methods	<p>Lectures will be presented through PC assisted tools (PowerPoint) and slide projector.</p> <p>Lecture notes and educational supplies will be provided by means of online platforms (i.e.: Edmodo, Google Drive etc.)</p>

Evaluation methods	<p>The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in the laboratory/production plants, as reported in the Academic Regulations for the Master Degree in Food Science and Technology (article 9) and in the study plan (Annex A).</p> <p>Students attending at the lectures may have a middle-term preliminary exam, consisting of an oral test, relative to the first part of the program, which will concur to the final evaluation and will be considered valid for a year.</p> <p>The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex B of the Academic Regulations for the Master Degree in Food Science and Technology.</p> <p>Non-Italian students may be examined in English language, according to the aforesaid procedures.</p>
Evaluation criteria	<p><i>Knowledge and understanding skills</i></p> <ul style="list-style-type: none"> • Describe the principles of human nutrition and the digestive system in its features and functions presented in lesson <p><i>Knowledge and understanding skills applied</i></p> <ul style="list-style-type: none"> • Evaluate food consumption and nutritional errors • Evaluate human nutritional requirements • Describe the relationship between nutrition and health • Describe the relationship between eating behavior and marketing as presented during the course <p><i>Making informed judgements and choices</i></p> <ul style="list-style-type: none"> • Make reasonable assumptions to change the style of food and the choice of food <p><i>Communicating knowledge and understanding</i></p> <ul style="list-style-type: none"> • Describe the characteristics and functions of the various organs of the gastrointestinal tract in digestion and absorption • Describe the various biological causes underlying a food pathology • Describe the catabolic, anabolic and functional role of macro and micronutrients <p><i>Capacities to continue learning</i></p> <ul style="list-style-type: none"> • Ability to learn or to hypothesize a possible approach to assessing daily needs and energy input in a diet presented as a case study
Receiving times	Tutorial activities: from Monday to Thursday 9.00 a.m. – 12.30 p.m. by appointment only