Academic subject: Physiology of human nutrition				
Degree Class: LM7		**Degree Course: Biotechnology for food quality and safety**	**Academic Year:** 2020/2021	
		Kind of class: (inserire mandatory o optional)	**Year:** 2020	**Period:** I
			ECTS: 6 divided into **ECTS lessons: 5 ECTS exe/lab/tutor: 1**	
Time management, hours, in–class study hours, out–of–class study hours lesson: 40 exe/lab/tutor: 12 in–class study: 52 out–of–class study:100				
Language: Italian	**Compulsory Attendance:** si			
Subject Teacher: Grazia Tamma	**Tel: +39 0805442388** **e–mail: grazia.tamma@uniba.it**	**Office:** Department of Biosciences, Biotechnologies and Biopharmaceutics Room 48 Floor 4	**Office days and hours:** Monday 11.30-13.30	
Prerequisites: Basic knowledge of anatomy, general physiology and biochemistry				
Educational objectives: Understanding the basic mechanisms of human nutrition physiology				
Expected learning outcomes (according to Dublin Descriptors)	**Knowledge and understanding:** Understanding of the basic physiological mechanisms of human nutrition and the role of nutrients **Applying knowledge and understanding:** Ability to evaluate human nutritional needs; Ability to evaluate the relationship between nutrition and health; **Making judgements:** Evaluation of possible nutritional errors in the context of a correct eating style; Ability to properly evaluate and choose foods according to the state of health (allergies and intolerances) **Communication:** Ability to describe the physiology of the digestive system in relation to digestion and absorption phenomena; Ability to describe the biological causes underlying an eating pathology **Lifelong learning skills: Ability to learn and deepen the concepts of physiology of human nutrition**			

Course program

- Functional anatomy of the digestive system:
Mouth
Pharynx
Esophagus
Stomach Intestine

-Control of intestinal function
Control by the autonomic nervous system
Intrinsic and extrinsic innervation
Hormonal control

-Gastrointestinal motility and its regulation
Motility pattern
Motility control
Chewing
Swallowing
Gastric motility
Intestinal motility

-Secretory activity of the digestive system
Salivary secretion
Esophageal secretion
Gastric secretion
Intestinal secretion
Pancreas
Liver
Adipose tissue
- Digestion and absorption
Digestion and absorption of carbohydrates
Digestion and absorption of proteins
Digestion and absorption of lipids
Absorption of water and minerals
Fibers
Intestinal microbiota
Endocrinological aspects and pathologies associated with nutrition
Insulin and glucagon
Leptin and ghrelin
Intestinal peptides
Diabetes, Obesity, metabolic syndrome
Nutrition and cancer
Eating disorders (anorexia, Bulimia)
Allergies, pseudo allergies and intolerances
-Energy balance
Basal metabolism
Diet-induced thermogenesis
Energy requirements
BMI and regulation of food intake
LARN
- Food and Nutrients
Nutritional groups
Nutrients
Vitamins
Alcohol
Antioxidants and free radicals
- Nutrition in particular physiological conditions
Feeding in the first year of life
Nutrition in children and adolescents
Nutrition in the third age
Nutrition during pregnancy and breastfeeding
Nutrition and sport

Teaching methods: The lessons will be conducted with the aid of slides prepared with power point. At the beginning of each lesson, the topics that will be covered are discussed collectively in order to understand the basic knowledge already held by the students and fill any gaps and doubts.

Auxiliary teaching: Digital media, presentations prepared with the use of power point software and presentation of videos relating to the topic of interest

Assessment methods: Oral exam that is divided into several questions relating to the program of frontal lessons and laboratory experiences

Bibliography: -Fisiologia medica di Arthur C. Guyton e John E. Hall
-Fisiologia dalle molecole ai sistemi integrati di E. Carbone, F. Cicirata G. Aicardi
-Principi di Nutrizione di Biagi, Di Giulio, Fiorilli e Lorenzini
-Alimentazione per lo Sport e la Salute di Biagi, Di Giulio, Fiorilli e Lorenzini