

General Information	Studies in NUTRITION SCIENCE FOR HUMAN HEALTH
Title of the subject	Biochemistry and Biochemical-clinical Analysis
Degree Course (class)	Nutrition Science for Human Health
ECTS credits	6
Compulsory attendance	No
Language	Italian

Subject Teacher		
Name and Surname	Pasquale Scarcia	
email address	pasquale.scarcia@uniba.it	
Place and time of reception	Campus in Via E. Orabona, 4 – Pharmacy build. 1 st floor, room 214/A Tuesday: 11.00 - 13.00; Thursday: 15.00 - 17.00	
ECTS credits details	Discipline sector (SSD)	Area
	Clinical Biochemistry and Clinical Molecular Biology (BIO/12)	Characterizing

Study plan schedule	Year of study plan	Semester
	first	second

Time management	Lessons	Laboratory	Exercises	Total
CFU	5	1		6
Total hours	40	12		62
In-class study hours				
Out-of-class study hours	85	13		98

Syllabus	
Prerequisites / Requirements	- Basic knowledge of Physics, Chemistry, Organic chemistry, Biochemistry, Anatomy, Human physiology.
Expected learning outcomes (according to Dublin descriptors)	
Knowledge and understanding	- Students will acquire integrated skills in the biological disciplines with reference to the bio-clinical sector. They will also acquire advanced scientific training in the biochemical-clinical field and will be able to use innovative analysis techniques and methodologies in the bio-health.
Applying knowledge	- Graduate students will be able to apply the acquired knowledge and understanding skills in a highly professional manner to the various relevant work fields. They will have a solid scientific background in techniques and methodologies for clinical biochemical applications in the biomedical, nutrition, research, and

	health sectors. Graduate students will also be able to design and support reasoning that allow the resolution of problems relating to their field of study. These skills will be stimulated during the attendance of theoretical courses and practical laboratory exercises.
Making informed judgments and choices	- The student must be able to critically collect and evaluate clinical data, formulate hypothesis and independently search for related scientific information.
Communicating knowledge	- Interact with other professionals involved in patient care through teamwork, as well as the ability to communicate information, problems and solutions inherent to the discipline to specialist and non-specialist interlocutors.
Capacities to continue learning	- The student must develop the learning skills necessary to undertake the study of subsequent disciplines with a high degree of autonomy.
Study Program	
Content	<ul style="list-style-type: none"> - Definition, limits and aims of clinical biochemistry. - Methods for the collection of biological samples. - Concepts of analytical and biological variability of laboratory data. - Reliability of clinical laboratory data. - Main analytical techniques used in the laboratory - Electrophoretic and spectroscopic techniques. - Carbohydrates: Hormonal regulation of glucose metabolism. - Clinical biochemistry of diabetic disease. - Laboratory evaluation of glucose metabolism. - Diabetes diagnostics - Diseases of glycogen storage. - Lipids: Clinical biochemistry of plasma lipoproteins. - Hyperlipoproteinemias and cardiovascular risk. - Electrophoresis of lipoproteins - Methods for measuring total cholesterol and HDL and LDL cholesterol - Dosage of triglycerides. - Proteins: clinical biochemistry of pathologies associated with hyperproteinemia and hypoproteinemia. Electrophoretic pattern analysis. - Vitamins: biochemical functions. - Weaknesses: causes and clinical manifestations. - Liver and kidney function tests. - Laboratory diagnostics of allergic diseases - Metabolism and biochemistry of residues. - Dioxin and dioxin-like compounds and their carcinogenicity in humans.

	<ul style="list-style-type: none"> - Key elements in assessing the effects on human health. - Risk management guidelines from dioxins and similar dioxin compounds. - Concept of toxic equivalence (TEFs and TEQs) - Basic laboratory of molecular biology
Bibliography and textbooks	<ul style="list-style-type: none"> - "Biochimica per le discipline biomediche" J.W. Baynes M.H. Dominiczak - Editrice Elsevier - "Biochimica clinica e Medicina di Laboratorio" M. Ciaccio, G. Lippi - Ed EDISES - "Interpretazione clinica degli esami di Laboratorio" A. Angeloni, C. Marchese, R. Verna - Ed PICCIN..
Notes to textbooks	
Teaching methods	Lectures with PowerPoint presentations.
Assessment methods	Oral exam
Evaluation criteria	<ul style="list-style-type: none"> - Knowledge and understanding <p>Knowledge and understanding the Biochemical-clinical Analysis related to the patient's nutritional status</p> <ul style="list-style-type: none"> - Applying knowledge and understanding <p>Describe the strategies needed for the setup of clinical test</p> <ul style="list-style-type: none"> - Communicating knowledge and understanding <p>Capability to meaning of clinical test results.</p> <ul style="list-style-type: none"> - Communication skills <p>Capability to present in a clear way and with adequate language.</p>
Further information	