UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Biomedicina, Neuroscienze e Diagnostica avanzata		
ACADEMIC YEAR	2022/2023		
BACHELOR'S DEGREE (BSC)	PSYCHIATRIC REHABILITATION TECHNIQUE		
INTEGRATED COURSE	APPLIED BIOLOGY AND HUMAN ANATOMY - INTEGRATED COURSE		
CODE	21163		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	BIO/13, BIO/16		
HEAD PROFESSOR(S)	CAMPANELLA CLAUDIA	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)	RAIMONDO STEFANIA	Ricercatore a tempo determinato	Univ. di PALERMO
	CAMPANELLA CLAUDIA	Professore Ordinario	Univ. di PALERMO
CREDITS	6		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	**CAMPANELLA CLAUDIA** Friday 10:00 11:30 Sezione di Anatomia umana dip BioNeCE necessario inviare una email due giorni prima **RAIMONDO STEFANIA** Thursday 15:00 17:00 BIND, sez. Biologia e Genetica, Via DIVISI 83, PalermoOltre all'orario di ricevimento, sono disponibile anche gli altri giorni previo appuntamento via e-mail.		

DOCENTE: Prof.ssa CLAUDIA CAMPANELLA

PREREQUISITES	The student must have basic knowledge of cell biology and chemistry
LEARNING OUTCOMES	In agreement with the Dublin Descriptors, at the end of the course and for passing the exam: D1- KNOWLEDGE AND UNDERSTANDING: The student must demonstrate a knowledge and understanding of applied biology () and human anatomy both macroscopic (regional) and systematic (individuals apparatuses), both microscopic (morphofunctional and organ units) which allows him to set up the discussion regarding the theoretical aspects in a logical and complete way, also managing to make any connections between the topics covered; D2- ABILITY TO APPLY KNOWLEDGE AND UNDERSTANDING: The student must demonstrate that he is able to apply the acquired knowledge to the treatment of problems in the field of human anatomy and applied biology. D3- AUTONOMY OF JUDGMENT: The student must have acquired knowledge that allows him to evaluate independently and motivated any different opinions on problematic aspects of human anatomy and applied biology. D4- COMMUNICATION SKILLS: The student will have to know how to transmit, in a clear and complete way, the acquired knowledge, and exposing them with properties of language and scientific terminology, organizing his own thoughts around the different themes of the course. D5- LEARNING SKILLS: The student must be able to examine and understand scientific texts / articles relating to topics in the field of Human Anatomy and Applied Biology, also in English, so that they can be used for study and research.
ASSESSMENT METHODS	The student will be assessed THE ORAL TEST, relating to the entire teaching with reference to the recommended texts and the teaching material produced by the teachers, consists of an interview with a minimum number of three questions. It is aimed at evaluating the "knowledge" acquired by the student and ascertaining: a) the knowledge acquired in the individual disciplines and the ability to establish connections between the contents b) the elaborative skills demonstrating to have understood the applications and implications of the contents within the professional context c) the expository skills demonstrating to possess adequate properties of language and ability to interact with examiners. as well as autonomy of judgment regarding the disciplinary contents. Students will have to present the topics in a clear and articulated way using scientific terminology appropriately. The evaluation is expressed out of thirty. The student obtains a minimum evaluation (grade 18-20 / 30) if he demonstrates, at least in general terms, knowledge and understanding of the topics covered and if he exposes them with properties of scientific language even if in an insufficiently articulated way. The evaluation will be more and more positive (grade from 20/30 to 29/30) the more the candidate demonstrates an in-depth knowledge of the topics deriving both from the information he has acquired during the course and from a careful and in-depth study. personnel of the recommended texts and if in the exhibition he demonstrates autonomy of judgment and understanding of the applicative properties of the new acquired knowledge. A clear and articulated exposition and the correct use of scientific terminology will also be positively evaluated. The mark of 30 or 30 cum laude will be obtained by an examiner who demonstrates an excellent knowledge of the topics that he presents in a clear and articulated way with excellent language properties and good analytical skills, demonstrating his autonomy of judgment and the ability to apply the new acquired knowledge.
TEACHING METHODS	Frontal Lessons and exercises with anatomical models (HUMAN ANATOMY) Frontal Lessons (Applied Biology)

MODULE
HUMAN ANATOMY

Prof.ssa CLAUDIA CAMPANELLA

SUGGESTED BIBLIOGRAPHY

SEELEY e VANPUTTE
ANATOMIA UMANA con cenni di: Istologia – Fisiologia – Clinica 2018 5ta edizione ISBN8879477455
Idelson Gnocchi

Conconi, Rumio
Principi di Anatomia Microscopica con cenni di Istologia e Anatomia Macroscopica 2018 ISBN 8833190064
Edises

AMBIT	10319-Scienze biomediche
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

The aim of the course is to:
know the main characteristics of the human body; understand and use the language of this discipline;
use the acquired knowledge in order to study the different organs and systems.
Furthermore, it must be able to evaluate the implications and results of studies aimed at clarifying the functioning of organs and systems. and to illustrate the concepts of Human Anatomy. At the end of the course the student will have to know the main morphofunctional characteristics of the human body systems, both from a macroscopic and a microscopic point of view. .

SYLLABUS

Hrs	Frontal teaching
3	Introduzione allo studio dell'anatomia anatomia macroscopica e microscopica; livelli di organizzazione e introduzioni ai sistemi e apparati; linguaggio anatomia Le modalita' di organizzazione dei tessuti tessuti epiteliali; tessuti connettivi; le membrane; il tessuto muscolare; tessuto nervoso -Introduction to Anatomy -Histological signs: epithelial tissue, connective tissue, muscle tissue
3	Skeletal Apparatus: bone histological organization; compact and spongy bone; bone development and growth; junctions; appendicular and axial skeleton; anatomy of the skeletal segments (neurocranium and splanchnocranium (ethmoid, sphenoid, temporal, jaw, mandible, palatine bones)); vertebrae, sacrum and coccyx, sternum, shoulder girdle, humerus, ulna, radius, pelvis, femur, tibia, fibula with relative junctions
2	General information on muscle tissue and skeletal muscles
3	General information on the cardiovascular system
2	Respiratory system: upper and lower respiratory tract. Lungs and hematosis mechanism
3	digestive system: study of the various organs that make up the digestive system and related organs
3	Urinary system: kidneys, ureters, bladder Generalities on the male and female reproductive system
2	Endocrine system
7	Nervous system (nervous tissue, spinal cord, spinal nerves, meninges, telencephalon, diencephalon, midbrain, pons and medulla cerebellum, general sensitivity,, autonomic nervous system)
2	The sense organs and the pathways attached to these organs

MODULE
APPLIED BIOLOGY AND GENETICS

Prof.ssa STEFANIA RAIMONDO

SUGGESTED BIBLIOGRAPHY

P. Bonaldo, C. Crisafulli, R. D'Angelo, M. Francolini, S. Grimaudo, C. Rinaldi, P. Riva, M.G. Romanelli "Elementi di Biologia e Genetica" EdiSES Editore.
Bonaldo, Duga, Pierantoni, Riva, Romanelli “Biologia e Genetica” EdiSES Editore.
H. Curtis, N. S. Barnes, "Le basi della biologia" (cellula, genetica, evoluzione), Zanichelli Editore
David Hillis, David Sadava, Craig Heller, Mary Price “Elementi di Biologia e
Genetica”, Zanichelli Editore.
N. A. Campbell, J.B. Reece “Biologia e Genetica” Pearson Editrice.

AMBIT	10319-Scienze biomediche
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

Know and describe: the structure and function of eukaryotic cells at various levels of biological organization, supramolecular and molecular mechanisms of gene expression, differentiation and cell cycle, methods of transmission of normal and pathological characters in the human species, the different types of mutations (gene, chromosomal and genomic) and their functional relationship with the phenotype.

SYLLABUS

Hrs	Frontal teaching
5	Biological macromolecules: DNA, RNA and Proteins (structure, types and functions) - Structural organization of the gene and genome (nuclear and mitochondrial) - DNA replication - The technique of Polymerase Chain Reaction (PCR).
5	The transcription and regulation; mRNA post-transcriptional modification in eukaryotes; The genetic code and its properties; The protein synthesis
5	The eukaryotic cell: morphological and functional organization; Chromatin and chromosomes; Mitosis; Meiosis and gametogenesis.
5	Mendel's laws: dominance and recessive; The principle of segregation; Independent assortment of forms of intersection between the two characters-hybrids; Punnett diagram and determination of the proportions of gametes classes, the genotypes and phenotypes in predefined intersections.
5	Principles of formal genetics and human genetics: genotype and phenotype. Diploidy and sexuality; Alleles and loci; Partial dominance and codominance; Multiple alleles; Patterns of transmission of genetic traits in humans; The pedigree; Chromosomal aberrations: causes, types and related phenotypes; Techniques of cytogenetic analysis; Karyotypic formulas.
5	Genomic mutations (Copy Number Variations); Gene mutations: types, terminology, onset mechanisms, phenotypic effects, methods of analysis in the "molecular diagnosis" of genetic diseases; Relationship between genotype and phenotype: penetrance concepts, pleiotropy expressivity, genetic heterogeneity, phenocopies; dosage compensation and Mary Lyon hypothesis, functional mosaicism;Molecular genetics cases of hereditary disorders of neurological and neuropsychiatric interest.