UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Biomedicina, Neuroscienze e Diagnostica avanzata		
ACADEMIC YEAR	2016/2017		
BACHELOR'S DEGREE (BSC)	SPEECH THERAPY		
INTEGRATED COURSE	ANATOMY AND PHYSIOLOGY - INTEGRATED COURSE		
CODE	01267		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	BIO/16, BIO/09		
HEAD PROFESSOR(S)	MUDO' GIUSEPPA	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)	FUCARINO ALBERTO GIUSEPPE	Professore a contratto	Univ. di PALERMO
	MUDO' GIUSEPPA	Professore Ordinario	Univ. di PALERMO
CREDITS	9		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	**FUCARINO ALBERTO GIUSEPPE** Monday 09:00 13:00 Dipartimento Anatomia Umana Policlinico Palermo Wednesday 09:00 13:00 Dipartimento Anatomia Umana Policlinico Palermo Friday 09:00 13:00 Dipartimento Anatomia Umana Policlinico Palermo **MUDO' GIUSEPPA** Monday 00:00 00:01 Previo accordo		

DOCENTE: Prof.ssa GIUSEPPA MUDO'

PREREQUISITES	Knowledge of the principles of physics , biophysics and biochemistry useful to the anatomy and physiology of the organs understanding.
LEARNING OUTCOMES	Knowledge and understanding At the end of the course students will develop an integrated understanding of the structural components of the human body , of the apparatuses and systems, and an understanding of the key aspects of the functioning of organs and systems. Students will develop the ability to organize an integrated view of the main functions of the body and will understand the responses of the organs or adaptation of apparatuses in different functional conditions. Students will have knowledge of the main functions of the SNC in motor, cognitive , and behavioral processes, as well as knowledge and understanding of emotional responses. Overall they will have an understanding of the integrated relationship between the nervous system and organ function, with in-depth knowledge of the organization of the brain function of language and for speech signals and sound. Applying knowledge and understanding Students will gain an overall knowledge of the human body with an integrated view of organs and systems and, in particular, an ability to use in their Speech Therapy profession the understanding of the anatomical and functional structures involved in phonation and in the nervous control of this, with particular attention in anatomical and functional organization of the brain areas involved in language. Students will use this knowledge directly as a basis for advancement in the study of pathophysiological mechanisms, clinical and instrumental characteristics of the main pathologies of competence. Evaluation autonomy Students will be able to assess and deal rationally and independently operating problems of organs and systems involved in the perception and production of language skills. Students will develop the ability to correlate the morphological and functional data acquired to the interpretation of disorders of the organs involved in the process of phonation and higher nervous functions involved in the production and speech perception Communication skills Students will develop the ability to communicate and disseminate clear and autonomy, both in their professional and non-professional responsibilities, the knowledge acquired during the course, and ability to communicate ideas, problems and solutions related to such knowledge. Learning ability Students will develop mastery of basic skills learned in the course, which will allow them to fully pursue the later stages of the studies, and update capabilities and deepening of the knowledge in order to improve the overall approach to their professional responsibilities.
ASSESSMENT METHODS	Oral evaluation The oral examination will take place with the formulation of two to three general questions on the topics covered in the course and described in the teaching program. The test will verify the degree of student learning, its ability to integration of knowledge and range of opinions on the learned knowledge. Will be assessed clarity in exposing the subjects learned and the property of language. Particular attention will be reserved for topics characterizing the degree course. Ongoing evaluation The anatomy module may provide an ongoing evaluation written or oral about the general topics covered in the lessons have already been held, to test how acquired by the student after a certain number of hours of lectures. The written test will provide for 25 questions with 4 multiple choice and essay questions, while the oral test will take place with the formulation of two to three questions. The test evaluation will be of thirty following the pattern described at the link http://www.unipa.it/scuole/dimedicinaechirurgia/.content/documenti/Tabella-Valutazione-Inglese.pdf
TEACHING METHODS	Frontal lessons

MODULE
HUMAN ANATOMY

Prof. ALBERTO GIUSEPPE FUCARINO

SUGGESTED BIBLIOGRAPHY

F.H. Martini, J.L. Nath - Fondamenti di Anatomia e Fisiologia, III Ed., EdiSES
D.U Silverthorn - Fisiologia Umana- Un approccio integrato. V Ed. Pearson Italia.
R. Rhoades R. Pflanzer - Fisiologia Generale e umana. Ed. Piccin.

AMBIT	10319-Scienze biomediche
INDIVIDUAL STUDY (Hrs)	60
COURSE ACTIVITY (Hrs)	40

EDUCATIONAL OBJECTIVES OF THE MODULE

Knowledge of the structural components of the human body. Knowledge of the equipment and systems and understanding of morphofunctional relationship between the organs that constitute them. Gain a comprehensive view of the human body that integrates organs and systems and, in particular, knowledge of the anatomical structures involved in phonation and nervous control of this.

SYLLABUS

Hrs	Frontal teaching
3	General anatomy: Characteristics and significance of the discipline. Subdivision of matter according to the means of investigation and the study methods. Organization of living beings and, in particular, of the human body.
2	The systems and organ systems and their classification according to the manifestations of the attivita 'life. The anatomical terminology of the external forms of the human body. The cavity 'bust.
3	The anatomical position and terms of position. The terms of movement. General information on the cell. Definition of tissue, organ and apparatus.
2	General information on the locomotor system.
1	General information on the locomotor system.
4	Splanchnology : Location, shape, relationships and structure of the organs of the Respiratory, Urinary, Digestive and Endocrine System. The pleura. The peritoneum. The retroperitoneal space.
1	Cellular organization of the nervous tissue.
4	Anatomical organization of the nervous system, spinal cord, spinal meninges, the cerebrospinal fluid and the spinal nerves.
3	Organization of the brain: brainstem, cerebellum, midbrain, diencephalon, pons, medulla oblungata, telencephalon.
2	Anatomy and morphology of somatic pathways of sensitivity and motor activity.
2	Anatomy and morphology of the cranial nerves.
2	Anatomy and morphology of the sense organs.
1	Anatomy and morphology of the cerebral cortex.
2	Anatomy of the nasal and resonance cavities.
3	General organization and organogenesis of articulation organs: oral cavity, jaw and temporo-mandibular joint.
3	Anatomy and morphology of the pharynx, trachea and bronchi
2	Anatomy and morphology of the larynx.

MODULE
PHYSIOLOGY

Prof.ssa GIUSEPPA MUDO'

SUGGESTED BIBLIOGRAPHY

F.H. Martini, J.L. Nath - Fondamenti di Anatomia e Fisiologia, III Ed., EdiSES
D.U Silverthorn - Fisiologia Umana- Un approccio integrato. V Ed. Pearson Italia.
R. Rhoades R. Pflanzer - Fisiologia Generale e umana. Ed. Piccin.

AMBIT	10319-Scienze biomediche
INDIVIDUAL STUDY (Hrs)	75
COURSE ACTIVITY (Hrs)	50

EDUCATIONAL OBJECTIVES OF THE MODULE

The course goal is to put the student in a position to know the basics of the functioning of the major organs and systems of the human body, with particular attention to the speech perception, nervous system and production of language. Knowing how to reason about adaptive responses and on major integrated regulatory mechanisms of the various devices, with particular focus on integrated control of the central nervous system and the apparatus of phonation. Knowing the neuronal and molecular basis of the main higher brain functions: language, emotions, memory and behavior. To know the concept of plasticity functional nervous.

SYLLABUS

Hrs	Frontal teaching
2	General organization of physiological functions - Levels of integration of physiological functions (organs, tissues, cells). Concept of internal compartiment . Water compartments of the body. Diffusion, passive and active transport of solutes and solvents
3	Contractility of the cells. Excitation- contraction coupling in striated muscles and working mechanism of the sarcomere and contractile proteins. Morpho-functional characteristics of the smooth muscle. Physiological tetanus. Isometric and isotonic contractions.
4	Cardio-circulatory system. Phases of the cardiac cycle. Pressure and volumetric changes in the heart chambers and in the large arteries. Cardiac pacemaker and propagation of cardiac excitement. Specific functions of the arteries and arterioles. Functions of capillaries and veins. Blood pressure control. Overview of blood constituents and their function
3	Physiology of the kidney - Glomerular ultrafiltration. Tubular functions. Kidney controls of fluid and electrolyte balance, blood pressure and pH. Urination.
4	Physiology of the stomatognathic system - Structure of the salivary glands. Salivation: Dynamics and composition of salivary secretion, regulation of salivary secretion. Physiology of the masticatory system. Chewing: bone, joint, occlusal, muscular and nervous factors. Anatomy and physiology of swallowing.
5	Physiology of digestive apparatus - Morpho-functional organization of digestive apparatus, gastric activity and its regulation. Small intestine, large intestine, pancreas and liver functions. Digestion, absorption and utilization of nutrients.
3	Physiology of communication - Physiology of Respiratory Apparatus. Respiratory mechanics. Pleural pressure and dynamics of the thoraco-pulmonary system. Gases exchange of in the cells and tissues. Blood gas transport. Upper respiratory tract. Respiratory function controll. Air volumes mobilization. Adaptation of respiration to phonation.
2	Physiology of the Vibration emission apparatus - Larynx, muscles and cartilage of the larynx , larynx acoustic functions. Vocal cords.
1	Physiology of the Resonance Apparatus - pharynx, nose, sinuses.
2	Physiology of Articulation Apparatus - Oral cavity, tongue, jaws, lip. Production of phonatory sounds. Intensity, pitch and timbre of the voic . Articulation of vowels and consonants.
3	Physiology of the nervous system - Notions of neuronal excitability and action potential, synapses and neurotransmitters.
3	Brain areas involved in motor activity: motor cortex, cerebellum and basal ganglia. Functions of the frontal lobe.
6	Somatic sensitivity, acoustic and visual perception and information processing in the cerebral cortex. Associative cognitive processes.
2	Neurobiology of emotions: fear, anxiety, motivation-reward-pleasure.
3	Language: Functional aspects of cortical areas involved in perception and speech production. Neurofunctional aspects in polyglot. Deafness and neurophysiological aspects of the cochlear implant.
2	Neurobiology of consciousness, of attention and memory formation.
2	Synaptic and neuronal plasticity. Processes of regeneration and nerve repair and functional role of neuronal stress .