



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2018/2019		
BACHELOR'S DEGREE (BSC)	BIOLOGICAL SCIENCES		
SUBJECT	GENERAL PHYSIOLOGY		
TYPE OF EDUCATIONAL ACTIVITY	B		
AMBIT	50028-Discipline fisiologiche e biomediche		
CODE	03369		
SCIENTIFIC SECTOR(S)	BIO/09		
HEAD PROFESSOR(S)	MULE' FLAVIA	Professore Ordinario	Univ. di PALERMO
	AMATO ANTONELLA	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	9		
INDIVIDUAL STUDY (Hrs)	153		
COURSE ACTIVITY (Hrs)	72		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	3		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	AMATO ANTONELLA Monday 14:30 16:00 Presso studio docente, stanza 506, Dpt STEBICEF Edificio 16-Viale delle Scienze, preferibilmente con conferma incontro via email: antonella.amato@unipa.it MULE' FLAVIA Friday 10:00 12:00 Studio personale presso Dipartimento STEBICEF, Edificio 16 -Il piano- viale delle Scienze. E' preferibile concordare appuntamento per e-mail: flavia.mule@unipa.it		

DOCENTE: Prof.ssa ANTONELLA AMATO- *Lettere L-Z*

PREREQUISITES	Knowledge of: principles of chemistry, structure of the different cell types, structure and function of proteins.
LEARNING OUTCOMES	Knowledge and understanding of various body functions. The student will be able to understand the mechanistic aspect and finalist meaning of the body various functions. Ability to interpret critically the concepts contained in the texts or the statements of the teacher. Capacity to communicate physiological topics. Ability to increase physiology knowledge by different scientific sources.
ASSESSMENT METHODS	Oral examination. It is based on three questions on large topics. Additional secondary questions will help to assess evaluate the rational and critical ability of the student. The exam is designed to evaluate: the rational and critical learned content; the capacity of exposure and use of an appropriate scientific language; the ability to synthesize and to establish connections between topics; the level of detail. The assessment is expressed in thirtieths. The final evaluation will be more and more positive as the student will prove to have full knowledge and comprehension of the subject.
EDUCATIONAL OBJECTIVES	To provide basic knowledge on the different vital functions of the animal body and to understand the mechanisms responsible for homeostasis.
TEACHING METHODS	Oral lessons
SUGGESTED BIBLIOGRAPHY	Taglietti - Casella. FISILOGIA E BIOFISICA delle cellule. Edises2015 Silverthorn FISILOGIA UMANA Casa editrice Pearson vii edizione 2017

SYLLABUS

Hrs	Frontal teaching
8	Homeostasis and regulation of vital functions. Feed-back-control system. Fluid compartments in the body. Equilibrium distribution of ions. Membranes, channels and transport. Passive transmembrane movements and active transport. The physical basis of neuronal function. Electrochemical potentials. The resting potential
20	Nervous and endocrine control systems. General organization of the vertebrate central and peripheral nervous system. Electrical signals of neurons. The action potential. The propagation of the action potential. Synaptic transmission. Presynaptic release of neurotransmitters. The chemical nature of neurotransmitters. Direct and indirect neurotransmission. Integration at synapses. The neuromuscular junction. General properties of sensory reception. Transduction and encoding. Typical neuronal circuits. The reflexes. The endocrine system: classification of hormones. Control of hormonal release.
12	Muscle and movements. Structural basis of muscle contraction. The sliding filament theory. Cross-bridge and force production. Mechanics of muscle contraction. Excitation-Contraction coupling. Cardiac muscle and Smooth muscle
10	Circulation. Function of the heart. Properties of myocardium. Regulation of cardiac activity. Functions of the vascular system. Hemodynamic. Relationship between pressure and flow. The blood vessels. Capillaries and microcirculation. Functions of the blood (cells and plasma). platelets and emostasis
4	Blood: the count of red cells. Differential count of white cells. Blood group determination
6	The respiratory function. Ventilation. Exchange of gases. Blood gas transport.
6	Renal physiology. The glomerular filtration process. Tubular transport processes. The concentrating of urine. Endocrine control of kidney
6	The nutrition. Digestion and absorption. The gastrointestinal secretions.

DOCENTE: Prof.ssa FLAVIA MULE'- *Lettere A-K*

PREREQUISITES	Knowledge of: principles of chemistry, structure of the different cell types, structure and function of proteins.
LEARNING OUTCOMES	Knowledge and understanding of various body functions. The student will be able to understand the mechanistic aspect and finalist meaning of the body various functions. Ability to interpret critically the concepts contained in the texts or the statements of the teacher. Capacity to communicate physiological topics. Ability to increase physiology knowledge by different scientific sources.
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