



# UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche		
ACADEMIC YEAR	2018/2019		
MASTER'S DEGREE (MSC)	MOLECULAR AND HEALTH BIOLOGY		
INTEGRATED COURSE	PATHOPHYSIOLOGY OF SYSTEMS AND NEUROBIOLOGY - INTEGRATED COURSE		
CODE	15432		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	BIO/09		
HEAD PROFESSOR(S)	MULE' FLAVIA	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)	MULE' FLAVIA	Professore Ordinario	Univ. di PALERMO
	SERIO ROSA MARIA	Professore Ordinario	Univ. di PALERMO
CREDITS	9		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<b>MULE' FLAVIA</b> 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		
	<b>SERIO ROSA MARIA</b> Tuesday 09:00 12:00 Studio Pt 072 Dipartimento STEBICEF. Ed. 16. Primo piano		

**DOCENTE:** Prof.ssa FLAVIA MULE'

PREREQUISITES	Knowledge of microanatomy of the human organs, biochemistry, general physiology and neuron physiology.
LEARNING OUTCOMES	Knowledge of organ different functions and neuron biology and understanding of the pathological implications. To understand how the physiological impairments can lead to disease and the relationship between central nervous system and environment. Ability to interpret critically the concepts contained in the texts or the statements of the teacher. Capacity to communicate physiopathological and neurobiological topics. Capacity to learn how to deepen further knowledge.
ASSESSMENT METHODS	<p>The final test consists of an oral examination. Student will be tested on at least two topics per module.</p> <p>Final assessment aims to evaluate whether the Student has knowledge and understanding of the subjects, properties of language and is able to apply knowledge to answer to the evaluation questions. The final evaluation will be weighed with the CFU number of each of the modules. The pass mark will be reached when the student will have shown an acceptable knowledge and understanding of the topics and presentation skills, but minimal ability to independently apply the knowledge gained. The demonstration of a greater knowledge of the topics together with a higher language skills and application of acquisitive knowledge will be proportionally evaluated more positively.</p> <p>The assessment is carried out of 30 and the marks go from sufficient (18/30) to excellent (30/30 cum laude).</p>
TEACHING METHODS	Oral lessons

## MODULE PATHOPHYSIOLOGY OF SYSTEMS

*Prof.ssa FLAVIA MULE'*

### SUGGESTED BIBLIOGRAPHY

Berne Levy – FISILOGIA – Ambrosiana 2010 sesta edizione

<b>AMBIT</b>	50505-Discipline del settore biomedico
<b>INDIVIDUAL STUDY (Hrs)</b>	102
<b>COURSE ACTIVITY (Hrs)</b>	48

### EDUCATIONAL OBJECTIVES OF THE MODULE

The course aims to broaden and to deepen the knowledge on the main functions of the human body and the pathological implications.

## SYLLABUS

Hrs	Frontal teaching
10	The lung and its disorders. Assessment of lung function. Spirometry. COPD. Fibrosis. asthma Chemoreflexes in breathing. Neural control of respiration.
10	Physiology of human reproduction. Functions of male and female reproductive apparatus. Pregnancy and lactation. Male and female Infertility. Techniques of assisted reproduction
8	Cardiovascular pathophysiology. Electrocardiogram and causes and types of Arrhythmias. Arterial pressure and neurohumoral regulation of arterial pressure. Regulation of peripheral blood flux. Atherosclerosis
4	Innate and acquired immunity. Inflammation
8	Renal physiology and pathophysiology of kidney.
2	Acid Base Balance in the Human Body.
2	Calcium homeostasis
2	Recording of the heart's electrical activity. Use of manual sphygmomanometers.
Hrs	Others
2	test on acquired knowledge

## MODULE NEUROBIOLOGY

*Prof.ssa ROSA MARIA SERIO*

### SUGGESTED BIBLIOGRAPHY

Bear et al. Neuroscienze. Esplorando il cervello EDRA 2016

<b>AMBIT</b>	20879-Attività formative affini o integrative
<b>INDIVIDUAL STUDY (Hrs)</b>	51
<b>COURSE ACTIVITY (Hrs)</b>	24

### EDUCATIONAL OBJECTIVES OF THE MODULE

The course aims to provide knowledge of the fundamental principles of the nervous system physiology: in particular cellular neurophysiology, synaptic transmission and neural networks, the functional organization of perception and movement. Moreover, the cellular mechanisms underlying learning and memory processes will be analyzed.

## SYLLABUS

Hrs	Frontal teaching
2	The anatomical and functional organization of the nervous system.
2	Nerve cells and Glial cells: cytology and functions.
7	Nerve cells, signaling networks and Behavior.
4	The functional organization of perception and Movement. Integration of sensory and motor function.
3	The formation and regeneration of Synapses
6	Sensory experience and the fine tuning of synaptic connections: critical periods. Cellular mechanisms of learning and memory.