General Information	
Academic subject	**Neurobiology of psychic processes**
Degree course	Psychological Sciences and Techniques
Curriculum	
ECTS credits	6
Compulsory attendance	Yes
Language	Italian

Subject teacher	Name Surname	Mail address	SSD
	Lucantonio Debellis	lucantonio.debellis@uniba.it	BIO/09

ECTS credits details	Discipline	SSD	ECTS
Basic teaching activities	Physiology	BIO/09	6

Class schedule	
Period	2nd Semester March 2018
Year	2017 - 2018
Type of class	Lectures

Time management	
Hours measured	60 min.
In-class study hours	42
Out-of-class study hours	108

Academic calendar	
Class begins	March 2018
Class ends	June 2018

Syllabus	
Prerequisite requirements	Basic knowledge of anatomy and human physiology
Expected learning outcomes (according to Dublin Descriptors)	• *Knowledge and understanding:* Possess knowledge and understanding of: A) characteristics of the nervous system in its structural and functional components of cellular and molecular mechanisms underlying cognitive processes and behavioral responses. B) relationships between biological phenomena and cognitive psychological phenomena, with particular reference to the role of sensory learning experiences, in the determination of the functional and cognitive development of the nervous system and the evolution of behavior. • *Applying knowledge and understanding:* Demonstrate knowledge and understanding, appropriate to evaluate the problems of the relations between biological phenomena and cognitive psychological phenomena, applied to the design and support of arguments, in solving problems within their field of study and professional work and knowledge of some cutting edge of their field. • *Making informed judgements and choices:* To acquire the ability to gather and interpret data useful to inform judgments on functional issues, behavioral and psychological. • *Communicating knowledge and understanding:* To acquire the ability to describe in a clear and understandable the relationships between biological phenomena and cognitive psychological phenomena, in support of arguments related to the conduct of the profession. • *Capacities to continue learning:* Develop the necessary learning skills to

	undertake further study with a high degree of autonomy in the use of advanced textbooks, scientific publications and information on the web.
Contents	Functional physiology of nervous system and psychic processes
Course program	▪ Cell biology, development and structure of the nervous system: – Structure and functions of nerve cells – Development, differentiation and survival of nerve cells – Role of neurotrophic factors, critical periods and sensory experiences. – Sexual differentiation of the nervous system. ▪ Communication in nerve cells: – Structure and function of the cell membrane – Ion channels and genesis of the cell membrane electrical potential – Propagated electrical signals: the graduated potential and the action potential ▪ Communication between neurons: – Synaptic transmission, neurotransmitters, postsynaptic receptors – Peripheral and central synapses, synaptic integration ▪ Sensory systems: – General characteristics of the perceptions – Somatosensory perception: touch, nociception, proprioception; – Visual perception: eye, the retina, phototransduction, visual pathways, visual cortex, analysis of visual information, perception of shapes, colors and movement – Auditory perception, spatial localization of sound, auditory brain areas and language. – Perception of taste, smell and psycho-behavioral influences ▪ Movement: muscles, muscle receptors, spinal reflexes, voluntary movement and its control. ▪ Motivations: autonomic nervous system, hypothalamus, endocrine system, homeostatic processes, circadian rhythms, feeding behavior, sleep and related syndromes. ▪ Learning and memory: – Forms of associative and non-associative learning, cellular mechanisms of habit and sensitization, classical and active conditioning, long-term potentiation, neuronal changes. ▪ Brain aging: senile dementia, Alzheimer disease.
Bibliography	– "NEUROSCIENZE" di D. Purves, G.J. Augustine, D. Fitzpatrick, W.C. Halla, A. LaMantia, L.E. White – Ed. Zanichelli – "PRINCIPI DI NEUROSCIENZE" di E. Kandel, J. Schwartz, T. Jessel; 3a edizione; Casa Editrice Ambrosiana CEA – "IL CERVELLO E LA MENTE" di N.V. Watson, S.M. Breedlove – Ed. Zanichelli – "FISIOLOGIA - dalle molecole ai sistemi integrati" di E. Carbone, F. Cicirata, G. Aicardi; Editrice EdiSES – "FISIOLOGIA – molecole, cellule e sistemi" di E. D'Angelo et al.; Editrice Edi Ermes
Notes	Key reference: "NEUROSCIENZE" di D. Purves, G.J. Augustine, D. Fitzpatrick, W.C. Halla, A. LaMantia, L.E. White – Ed. Zanichelli
Teaching methods	Frontal lessons with Power Point presentations and ongoing assessments
Assessment methods	Oral exam and Written exercise
Further information	