V year (1st semester) **A.Y. 2021-22**	Scientific Field	**NEUROLOGICAL SCIENCES**	TUTOR	ECTS
	MED/27	Neurosurgery	M.F. Fraioli	1
	MED/26	Neurology	Marfia Girolama Alessandra	1
CENTONZE D. **COORDINATOR**	MED/26	Neurology	Schirinzi Tommaso	1
	MED/26	Neurology	Centonze Diego	2
			TOT	5

SPECIFIC AIMS	To make students familiar with the pathogenesis, physiopathology, clinical manifestations and treatments of the main acute and chronic disorders of the central and peripheral nervous systems, including muscles.

PROGRAM **NEUROLOGY**	- Molecular and cellular biology of the neurons and of glial cells. - Ion channels, synaptic transmission and their alterations. - Plasticity of the central nervous system and functional and structural compensation of brain damage. - Approach to the patient with neurological disease. - Imaging, electrophysiologic, and laboratory techniques for neurologic diagnosis. - Anatomic, functional organization, and alterations of perception (somatosensory, visual, auditory, smell and taste systems). - Anatomic, functional organization, and alterations of movements (the motor unit, the neuromuscular synapse, spinal reflexes, upper and lower motorneurons, voluntary movement, the cerebellum and the basal ganglia). - Motor paralysis, abnormalities of movement, muscular tone and posture caused by diseases of the basal ganglia and of the cerebellum. - Anatomical, functional organization, and alterations of ocular movement and pupillary function. - Anatomical, functional organization, and alterations of the autonomic nervous system. - Sleep, dreaming and their alterations in neurological diseases. - Language, memory, behavior and their alterations in neurological diseases. - Pain, headache, epilepsy and other seizure disorders, coma, delirium and other acute confusional states, dementia. - Disturbances of cerebrospinal fluid (hydrocephalus, pseudotumor cerebri, low-pressure syndrome). - Intracranial neoplasms and paraneoplastic disorders. - Infections of the nervous system (viral, bacterial, fungal, spitochetal) and sarcoidosis.

	- Chronic meningitis and prion diseases. - Cerebrovascular diseases. - Craniocerebral trauma. - Multiple sclerosis and other inflammatory demyelinating diseases. - Degenerative diseases of the nervous system. - Diseases of the spinal cord. - Diseases of the peripheral nerves. - Diseases of cranial nerves. - Diseases of muscle. - Myasthenia gravis and other diseases of the neuromuscular junction. - The neurobiology of rehabilitation.

TEXTBOOKS	- Adams and Victor’s Principles of Neurology. Tenth Edition. Mc Graw Hill. - Principles of neural sciences. By Eric R. Kandel, James H. Schwartz. Fifth Edition. Mc Graw Hill.

EXAM METHOD	Oral exam.

EXAM COMMISSION	The Coordinator, full Professors of the disciplines, Professors of similar disciplines, Specialists of the subject, compose the exam Commission of the Integrated Course.

Centonze Diego, President
Marfia Girolama Alessandra
Fraioli Mario Francesco

CONTACTS

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PREREQUISITES: Previous knowledge and competence in the following subjects: Physiology and Pathophysiology, Biology and Genetics, Microbiology, Neurophysiology, Neuropharmacology.

The specific learning outcomes of the program are coherent with the general provisions of the Bologna Process and the specific provisions of EC Directive 2005/36/EC. They lie within the European Qualifications Framework (Dublin Descriptors) as follows:

1. **Knowledge and Understanding**

- Assess the physiologic principles, which govern the function of the main body systems and the alterations induced by functional and structural abnormalities.
- Describe the main aspects of general pathology and explain the physiopathologic mechanisms underlying the concept of benign and malignant disorders as well as reversible and irreversible damage cellular damage
- Demonstrate knowledge about the mechanism of cell cycle maintenance and regulation; the factors affecting it and their consequences.
- Understand the core principles of acute and chronic inflammation in relation to the molecular, systemic and clinical aspects.
- Relate the general principles, terminology, and modes of spread of disease to the study of Systemic Pathology and the ways in which pathology contributes to the understanding of patient presentation in a clinical setting
- Focus on each organ and describe the pathogenesis of the main disease.
- Correlate basic disease states studied at a cellular and gross anatomical level with the overt clinical signs and symptoms seen in those disorders.
- Learn to interpret appropriate laboratory and diagnostic studies.

2. **Applying Knowledge and Understanding**

- Apply the diagnostic procedure in pathology, through introduction of the differential diagnostic methods at the clinical level.
- Apply a basic understanding of histopathology and morbid anatomy to the examination of microscopic sections and gross specimens, respectively, displaying pathological processes
- Provide a differential diagnosis based on specific clinical data, providing a comprehensive explanation of the underlying reasoning.
- Learn the practical aspects of the pathologic diagnostic instruments, when to use them and how to perform them.

3. **Making Judgements**

- Recognize the importance of an in-depth knowledge of the topics consistent with a proper medical education.
- Identify the fundamental role of a proper theoretic knowledge of the subject in the clinical practice.

4. **Communication Skills**

- Present the topics orally in an organized and consistent manner.
- Use of proper scientific language coherent with the topic of discussion.

5. **Learning Skills**

- Identify the possible use of the acknowledged skills in the future career.
- Assess the importance of the acquired knowledge in the overall medical education process.