



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Biomedicina, Neuroscienze e Diagnostica avanzata		
ACADEMIC YEAR	2017/2018		
MASTER'S DEGREE (MSC)	MEDICINE AND SURGERY		
SUBJECT	NEUROLOGY		
TYPE OF EDUCATIONAL ACTIVITY	B		
AMBIT	50403-Discipline neurologiche		
CODE	05334		
SCIENTIFIC SECTOR(S)	MED/26		
HEAD PROFESSOR(S)	LA BELLA VINCENZO	Professore Ordinario	Univ. di PALERMO
	SALEMI GIUSEPPE	Professore Associato	Univ. di PALERMO
	RAGONESE PAOLO	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	6		
INDIVIDUAL STUDY (Hrs)	90		
COURSE ACTIVITY (Hrs)	60		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	5		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<p>LA BELLA VINCENZO Wednesday 11:00 12:00 stanza di studio del docenteCentro Esperto SLAvia G La Loggia 1 - 90129 Palermo1° piano c/o Laboratorio Neurochimica</p> <p>RAGONESE PAOLO Wednesday 13:00 15:00 via gaetano la loggia n 1</p> <p>SALEMI GIUSEPPE Friday 12:00 14:00 Via del Vespro 143</p>		

PREREQUISITES	Neuroanatomy, neurophysiology, neuropathology, neuropharmacology
LEARNING OUTCOMES	<p>To frame historically the evolution of knowledge of neurological diseases. To know the anatomical and clinical bases of the central and peripheral nervous system diseases and muscular system. To acquire the fundamental skills to deal with the diagnostic procedure used for the most frequent conditions of pathology of the central and peripheral nervous system and the muscular system. To have adequate knowledge on the management of the major diseases of the central and peripheral nervous system and the muscular system. To be able to formulate, on the basis of clinical history and objectivity neurological diagnostic hypotheses. To be able to achieve a basal neurological evaluation and a preliminary examination of the cognitive functions. To be able to suggest diagnostic and therapeutic strategies for major neurological diseases using the principles of evidence-based medicine, but taking into account individuality 'of the individual patient. To know how to communicate with the patient in a clear and free from technical terms and know how to propose to the patient a diagnostic procedure without alarmism, but with the necessary information. To know critically deepen neurological problems by consulting the International scientific literature</p>
ASSESSMENT METHODS	<p>The student's assessment involves a two-hour written test of thirty-two multiple-choice questions concerning etiopathogenesis, definition, clinical and instrumental evaluation, diagnostic criteria, differential diagnosis, and therapeutic approaches to neurological pathologies, an open question on etiopathogenesis of neurological pathologies and a second open question on diagnostic framing, diagnostic flow-charts or therapeutic approaches of the major neurological pathologies.</p> <p>The student will have to demonstrate that he has learned the historical evolution and the anatomo-clinical basics of neurological pathology, that he has acquired the basics to deal with the diagnostic procedure, prescribe an initial therapy, and follow the evolution of therapies proposed by the specialists in the field on the most common neurological pathologies by applying the principles of Evidence-based medicine, but taking into account the individuality of each patient.</p> <p>Each of the 32 multiple choice questions will be awarded a score of 0.5 points if the answer is correct, -0.2 points if the answer is wrong, 0 points if the answer is not indicated up to a maximum of 16 points. Each of the two open field questions will be awarded a score from 0 to 8 points in relation to the fairness of the answer to the question, to the clarity of the description, to the correct use of the Italian language and to the demonstration of having learned the main etiopathogenetic mechanisms of neurological diseases, if required, and having acquired the theoretical and practical tools to formulate diagnostic hypotheses, prognostic evaluation, and indication of treatment in the diseases of the nervous system. Therefore, from the two open field questions the student can acquire from 0 up to a maximum of 16 points. The total score obtained from the sum of the scores obtained in multiple choice questions and those obtained in open questions can thus reach a maximum of 32. The total score will be rounded to the upper value for fractions greater than or equal to 0.5, to the lower value for fractions below 0.5. The examination will be passed if the candidate has at least one score of 18/30; if the candidate has reached a score of 31 or 32 or if, after having scored 30 points, the open questions will be judged by the committee that is particularly worthy, the candidate will also be awarded with laude.</p> <p>According to the following link: http://www.unipa.it/scuole/dimedicinaechirurgia/content/documenti/Tabella-Valutazione-Italiana.pdf the meaning of individual votes can be as follows:</p> <p>A – A+ Excellent (30-30 cum laude), Eccellente. Excellent knowledge of teaching contents; students should show high analytical and synthetic capabilities and should be able to apply their knowledge to solve highly complex problems.</p> <p>B Very good (27-29), Ottimo. Very good knowledge of the teaching contents and excellent language control; students should show analytical and synthetic skills and be able to apply their knowledge to solve problems of medium and, in some cases, even higher complexity.</p> <p>C Good (24- 26), Buono. Good knowledge of teaching contents and good language control; the students should be able to apply their knowledge to solve problems of medium complexity</p> <p>D Satisfactory (21-23), Discreto. Average knowledge of the teaching contents, in some cases limited to the main topic; acceptable ability to use the specific discipline language and independently apply the acquired knowledge.</p> <p>E Sufficient (18-20), Sufficiente. Minimum teaching content knowledge, often limited to the main topic; modest ability to use the subject specific language and independently apply the acquired knowledge.</p> <p>F Fail, Insufficiente. Lack of an acceptable knowledge of the main teaching content knowledge; very little or no ability to use the specific subject language and apply independently the acquired knowledge.</p>
EDUCATIONAL OBJECTIVES	Educational objective of the module of neurology is to provide students with the theoretical and practical tools to formulate a hypothesis diagnostic, prognostic

	evaluation and an indication of treatment into the nervous system diseases. This objective will be 'pursued through a detailed analysis of various diseases, analysis that will be 'carried out starting from clinical series, using the principles of evidence-based medicine through diagnostic algorithms. However, there will not be left out arguments regarding the mechanisms that determine the various diseases of the nervous system. Will 'so that students learn the mode' of practical application of knowledge.
TEACHING METHODS	Lectures.,One week of attendance in the department, neurophysiopathology and outpatient clinics is scheduled in the internship programed by the degree course.
SUGGESTED BIBLIOGRAPHY	1. A. Federico, C. Caltagirone, L. Provinciali, G. Tedeschi – Neurologia pratica – EdiSES, 2014. 2. V. Bonavita, G. Di Iorio – Neurologia Clinica – Edizioni Medico Scientifiche, 2007. 3.. B. Bergamasco, R. Mutani – La Neurologia di Bergamini – Ed. Libreria Cortina, Torino, 2006.

SYLLABUS

Hrs	Frontal teaching
1	1. Introduction to clinical neurology. History of neurology. The clinical method in neurology. Neurological examination.. Diagnosis of injury site
1	2. Subcortical syndromes. Brain stem syndromes (alternating syndromes), spinal cord syndromes
2	3. The motor function (disorders of pyramidal and extrapyramidal systems, cerebellar coordination and basal ganglia)
2	4. The sensory system (spinal cord syndromes, syringomyelia, transverse myelitis, Brown-Sequard syndrome, thalamic syndrome, cortical disorders)
2	5. Disorders of higher cortical functions (aphasia, agnosia, apraxia, disorders of memory, disorders of body image, disorders of extracorporeal space
2	6. Instrumental ascertainments in neurology (neurophysiology, neuroimaging, analysis of cerebrospinal fluid, biopsy of muscle and nerve, genetic tests. 7. Epidemiology of neurological disorders
4	8. The disorders of vision (papillitis, retrobulbar optic neuritis, anterior ischemic optic neuritis, infective and autoimmune neuritis, the disorders of visual field). Multiple Sclerosis.
4	9. Disorders of ocular motility: ocular myopathies, myasthenia gravis and Eaton-Lambert syndrome, syndrome of cavernous sinus, Weber syndrome, Benedikt syndrome, Millard-Gubler syndrome, Internuclear ophthalmoplegia. Parinaud syndrome, Progressive supranuclear palsy.
1	10 The facial palsy. The Melkersson Rosenthal syndrome. The ponto-cerebellar angle syndrome.
1	11. The disorders of facial sensitivity: trigeminal neuralgia and atypical facial neuralgia
2	12. The disorders of equilibrium_ central and peripheral vertigo, nystagmus, armonic and dysarmonic syndromes, Meniere. BPV. Vascular disorders of posterior circle, Wallenberg syndrome. Disorders of cervical spine, Tabetic syndromes, Lichtheim syndrome. Autosomal dominant (SCA1, SCA2, SCA3, SCA6, SCA8, DRPLA) and, recessive (Friedrich, AVED) spinocerebellar ataxias
1	13. The mechanisms of neurodegeneration
2	14. Disorders of swallowing and of words articulation. Hints of anatomy ad physiology Disorders arising from vagus and accessory of vagus nerves, and from hypoglossus. Dysarthria. Dysphagia. Neurological causes, diagnostic procedures, therapeutical approaches. Vascular etiology. Vernet syndrome. Progressive Bulbar Palsy, Oculopharyngeal dystrophy. Syndromes of hypoglossus associated with lesions of other cranial nerves. 15. The lingual paralyses (Garcin, Tapia, Villaret, Collet-Sicard)
6	16. The headache. Migraine with and without aura. Tension headache. Cluster headache. Symptomatic headaches (SAH. vascular malformations - aneurysms, AVM, cavernous angioma, venous thrombosis, headache secondary to cerebrospinal fluid hypertension - benign cerebrospinal fluid hypertension and normal pressure hydrocephalus, headache secondary to cerebrospinal fluid hypotension - idiopathic, secondary to lumbar puncture, secondary to bone lesions, brain tumours. Phacomatosis. Neurofibromatosis type 1 and 2, Tuberous sclerosis, Headache by temporo-mandibular disorders, Headache by sinusitis).
2	17 Meningitis, encephalitis, thrombophlebitis
2	18 Epilepsia. Epileptogenesis pathophysiology Classification of epilepsy, etiology, treatment.
2	19 The cortical syndromes: frontal (Frontotemporal dementia. Progressive palsy), temporal, parietal, occipital, callosal, and limbic syndromes.
1	20 The acute delirium (intoxication encephalopathies, dysmetabolic encephalopathies, prion disease, hyperpexia encephalopathy. acute hypoxia encephalopathy).
3	21 The chronic confusion (Dementia - Alzheimer's dementia, vascular dementia, normal pressure hydrocephalus, chronic cranial trauma's dementia, pseudodementia, Mild Cognitive Impairment. Leukodystrophies).
2	22 Consciousness. Consciousness disorders. Examination of comatose patients. Sleep and its disorders. Disorders in the consciousness recovery (Locked-in syndrome, vegetative state, minimal consciousness syndrome). Hydrocephalus. Brain herniation.

SYLLABUS

Hrs	Frontal teaching
4	23. The hemiparesis: -Hemiplegic migraine - Acute and chronic cerebrovascular disorders (ischaemia and hemorrhage, etiology, pathophysiology, diagnostic procedures, acute therapies, secondary prevention, syndromes by occlusion of CCA, ICA, ACA, ACM, ACP, basilar artery, PICA, alternating syndromes (Weber, Benedikt, Millard-Gubler, Raymond. Foville, Wallenberg)
4	24- The tetraparesis (flaccid or spastic): the muscular disorders (dystrophies, congenite myopathies, metabolic myopathies, mitochondrial myopathies, channelopathies, myotonia, polymyositis/dermatomyositis, inclusion body myositis), acute transverse myelitis, myelitis, Motor neuron disease (ALS, SMA, PLS, PMA, PBP), Neuromyelitis optica spectrum disorders. Osteoarthritis of cervical spine.
4	25. Spastic paraparesis (familial spastic paraparesis, primary lateral sclerosis, vascular disorders of the spinal cord, tumours of the spine), and flaccid paraparesis (acute and chronic inflammatory, dismetabolic, vasculitic, amyloidotic, by porphiria, by vitamin deficits, genetic, secondary to drugs, by radicular compression). Other spinal cord syndromes (syringomyelia. Arnold Chiari syndrome, tabes dorsalis, carpal tunnel syndrome, lead paralysis)
2	26 The slowness of gait. Parkinsonisms. Parkinson disease. Vascular parkinsonism. Normal pressure hydrocephalus. Cortico-basal degeneration. Lewy body disease, Progressive Supranuclear palsy. Multisystem atrophy. Fahr disease
2	27 The involuntary movements: chorea, athetosis, tremors, ballism, dystonia, dyskinesia, tics, myoclonus
1	29 Neurological involvement in course of medical disorders: liver, renal, or respiratory failure, metabolic or ionic disorders, hormonal disorders, disorders of connective tissue, autoimmune disorders, deficit of vitamins

PREREQUISITES	Neuroanatomy, neurophysiology, neuropathology, neuropharmacology
LEARNING OUTCOMES	<p>To historically frame the evolution of knowledge of neurological diseases. To know the anatomical and clinical bases of the central and peripheral nervous system diseases and muscular system. To acquire the fundamental skills to deal with the diagnostic procedure used for the most frequent diseases of the central and peripheral nervous system, and the muscular system. To have adequate knowledge re the management of the major diseases of the central and peripheral nervous system and the muscular system. To be able to formulate, based on clinical history and neurological exam diagnostic hypotheses. To be able to achieve a basic neurological evaluation and a global examination of cognitive functioning. To be able to properly perform the appropriate diagnostic and therapeutic work-up for the most relevant neurological diseases using the principles of evidence-based medicine. Learn how to communicate with the patient in a clear manner, free from technical terms, and know how to propose to the patient a diagnostic procedure without alarmism, but with the necessary information. To critically deepen neurological problems using the international scientific literature and databases</p>
ASSESSMENT METHODS	<p>The student's assessment involves a two-hour written test of thirty-two multiplechoice questions concerning etiopathogenesis, definition, clinical and instrumental evaluation, diagnostic criteria, differential diagnosis, and therapeutic approaches to neurological diseases, an open question on etiopathogenesis of neurological diseases and a second open question on diagnostic framing, diagnostic flow-charts or therapeutic approaches of the major neurological diseases. The student will have to demonstrate that he/she has learned the historical evolution and the anatomo-clinical basis of neurological diseases, that has acquired the basics to deal with the diagnostic procedure, prescribe an initial therapy, and follow the evolution of proposed treatment by the field specialists re the most common neurological diseases by applying the principles of Evidence-based medicine.</p> <p>Each of the 32 multiple choice questions will be awarded a score of 0.5 points if the answer is correct, -0.2 points if the answer is wrong, 0 points if the answer is not indicated up to a maximum of 16 points. Each of the two open field questions will be awarded a score from 0 to 8 points in relation to the fairness of the answer to the question, to the clarity of the description, to the correct use of the Italian language and to the demonstration of having learned the main etiopathogenetic mechanisms of neurological diseases, if required, and having acquired the theoretical and practical tools to formulate diagnostic hypotheses, prognostic evaluation, and indication of treatment in the diseases of the nervous system. Therefore, from the two open field questions the student can acquire from 0 up to a maximum of 16 points. The total score obtained from the sum of the scores obtained in multiple choice questions and those obtained in open questions can thus reach a maximum of 32. The total score will be rounded to the upper value for fractions greater than or equal to 0.5, to the lower value for fractions below 0.5. The examination will be passed if the candidate has at least one score of 18/30; if the candidate has reached a score of 31 or 32 or if, after having scored 30 points, the open questions will be judged by the committee that is particularly worthy, the candidate will also be awarded with laude.</p> <p>According to the following link: http://www.unipa.it/scuole/dimedicinaechirurgia/.content/documenti/Tabella-Valutazione-Italiana.pdf the meaning of individual votes can be as follows:</p> <p>A – A+ Excellent (30-30 cum laude), Eccellente. Excellent knowledge of teaching contents; students should show high analytical and synthetic capabilities and should be able to apply their knowledge to solve highly complex problems.</p> <p>B Very good (27-29), Ottimo. Very good knowledge of the teaching contents and excellent language control; students should show analytical and synthetic skills and be able to apply their knowledge to solve problems of medium and, in some cases, even higher complexity.</p> <p>C Good (24- 26), Buono. Good knowledge of teaching contents and good language control; the students should be able to apply their knowledge to solve problems of medium complexity</p> <p>D Satisfactory (21-23), Discreto. Average knowledge of the teaching contents, in some cases limited to the main topic; acceptable ability to use the specific discipline language and independently apply the acquired knowledge.</p> <p>E Sufficient (18-20), Sufficiente. Minimum teaching content knowledge, often limited to the main topic; modest ability to use the subject specific language and independently apply the acquired knowledge.</p> <p>F Fail, Insufficiente. Lack of an acceptable knowledge of the main teaching content knowledge; very little or no ability to use the specific subject language and apply independently the acquired knowledge.</p>
EDUCATIONAL OBJECTIVES	<p>Educational objective of the neurology course is to provide students with the theoretical and practical tools to formulate a hypothesis diagnostic, prognostic evaluation and an indication of treatment of most relevant nervous system diseases. This objective will be pursued through a detailed analysis of various</p>

	diseases, analysis that will be carried out starting from clinical case-series, using the principles of evidence-based medicine with diagnostic algorithms. However, there will not be left out mechanisms which determine the various neurological diseases. So, students will learn the modality of practical application of knowledge.
TEACHING METHODS	Lectures. One week of attendance in the department, neurophysiopathology and outpatient clinics is scheduled in the internship programed by the degree course.
SUGGESTED BIBLIOGRAPHY	1 - A. Federico, C. Caltagirone, L. Provinciali, G. Tedeschi – Neurologia pratica – EdiSES, 2014. 2 - V. Bonavita, G. Di Iorio – Neurologia Clinica – Ed. Medico Scientifiche, 2007. 3 - B. Bergamasco, R. Mutani – La Neurologia di Bergamini – Ed. Libreria Cortina, Torino, 2006. 4 - C. Ferrarese. Core curriculum. Malattie del sistema nervoso 2nd edizione - Ed. McGraw Hill, 2016

SYLLABUS

Hrs	Frontal teaching
1	1) Introduction to clinical neurology. History of neurology. The clinical method in neurology. Neurological semeiology. Diagnosis of site
1	2) Subcortical syndromes. Infratentorial syndromes (alternating syndromes), spinal cord syndromes
2	3) The motor function (disorders of pyramidal and extrapyramidal systems, cerebellar coordination and basal ganglia)
2	4) The sensory system (spinal cord syndromes, syringomyelia, transverse myelitis, Brown-Sequard syndrome, thalamic syndrome, cortical disorders)
3	5) Disorders of higher cortical functions: aphasia, agnosia, apraxia, disorders of memory, disorders of body image, disorders of extracorporeal space
2	6) Diagnostic work-up in clinical neurology (neurophysiology, neuroimaging, analysis of cerebrospinal fluid, biopsy of muscle and nerve, genetic tests. 7) Epidemiology of major neurological disorders
3	8) The disorders of vision (papillitis, retrobulbar optic neuritis, anterior ischemic optic neuritis, infective and autoimmune neuritis, the disorders of visual field). Multiple Sclerosis and neuromyelitis optica.
3	9) Disorders of ocular motility: ocular myopathies, myasthenia gravis and Eaton-Lambert syndrome, syndrome of cavernous sinus, Weber syndrome, Benedikt syndrome, Millard-Gubler syndrome, Internuclear ophthalmoplegia. Parinaud syndrome, Progressive supranuclear palsy.
1	10) The facial palsy. The Melkersson Rosenthal syndrome. The ponto-cerebellar angle syndrome
1	11) The disorders of facial sensitivity: trigeminal neuralgia and atypical facial neuralgia
2	12) The disorders of equilibrium: central and peripheral vertigo, nystagmus, harmonic and dysarmonic syndromes, Meniere. BPV. Vascular disorders of posterior circle, Wallenberg syndrome. Disorders of cervical spine, Tabetic syndromes, Lichtheim syndrome. Autosomal dominant and recessive spinocerebellar ataxias
2	13) Disorders of swallowing and of words articulation. Hints of anatomy and physiology Disorders arising from vagus and accessory of vagus nerves, and from hypoglossus. Dysarthria. Dysphagia. Neurological causes, diagnostic procedures, therapeutical approaches. Vascular etiology. Vernet syndrome. Progressive Bulbar Palsy, Oculopharyngeal dystrophy. Syndromes of hypoglossus associated with lesions of other cranial nerves. 14) The lingual paralyses (Garcin, Tapia, Villaret, Collet-Sicard)
5	15) The headache. Migraine with and without aura. Tension headache. Cluster headache. Symptomatic headaches (SAH. vascular malformations - aneurysms, AVM, cavernous angioma, venous thrombosis, headache secondary to cerebrospinal fluid hypertension - benign cerebrospinal fluid hypertension and normal pressure hydrocephalus, headache secondary to cerebrospinal fluid hypotension - idiopathic, secondary to lumbar puncture, secondary to bone lesions, brain tumours. Phacomatosis. Neurofibromatosis type 1 and 2, Tuberous sclerosis, Headache by temporo-mandibular disorders, Headache by sinusitis)
2	16) Meningitis, encephalitis, thrombophlebitis
2	17) Epilepsia. Epileptogenesis pathophysiology. Classification of epilepsy, etiology, treatment
6	18) The cortical syndromes: frontal, temporal, parietal, occipital, callosal, and limbic syndromes. 19) Mechanisms of neurodegeneration. 20) Mild Cognitive impairment and the dementias - Alzheimer's disease, vascular dementia, frontotemporal dementia, normal pressure hydrocephalus, chronic cranial trauma's dementia, pseudodementia, Leukodystrophies
1	21) The acute delirium (intoxication encephalopathies, dysmetabolic encephalopathies, prion disease, hyperpnea encephalopathy, acute hypoxia encephalopathy)
2	22) Consciousness. Consciousness disorders. Examination of comatose patients. Sleep and its disorders. Disorders in the consciousness recovery (Locked-in syndrome, vegetative state, minimal consciousness syndrome). Hydrocephalus. Brain herniation.
4	23) The hemiparesis: hemiplegic migraine - Acute and chronic cerebrovascular disorders (ischemia and brain hemorrhage, etiology, pathophysiology, diagnostic procedures, acute therapies, secondary prevention, syndromes by occlusion of CCA, ICA, ACA, ACM, ACP, basilar artery, PICA, alternating syndromes (Weber, Benedikt, Millard-Gubler, Raymond. Foville, Wallenberg)

SYLLABUS

Hrs	Frontal teaching
3	24) The tetraparesis (flaccid or spastic): the muscular disorders (dystrophies, congenite myopathies, metabolic myopathies, mitochondrial myopathies, channelopathies, myotonia, polymyosits/dermatomyositis, inclusion body myositis), acute transverse myelitis, myelitis, Motor neuron disease (ALS, SMA, PLS, PMA, PBP). Osteoarthritis of cervical spine.
3	25) Spastic paraparesis (familial spastic paraparesis, primary lateral sclerosis, vascular disorders of the spinal cord, tumours of the spine), and flaccid paraparesis (acute and chronic inflammatory, dismetabolic, vasculitic, amyloidotic, by porphiria, by vitamin deficits, genetic, secondary to drugs, by radicular compression). Other spinal cord syndromes (syringomyelia. Arnold Chiari syndrome, tabes dorsalis, carpal tunnel syndrome, lead paralysis)
3	26) Bradykinesia and hypokinetic movement disorders. Parkinson's disease and parkinsonisms. Vascular parkinsonism. Normal pressure hydrocephalus. Cortico-basal degeneration. Lewy body disease, Progressive Supranuclear palsy. Multisystem atrophy. Fahr disease
2	27) Hyperkinetic movement disorders: Huntington's chorea, athetosis, tremors, ballism, dystonia, dyskinesia, tics, myoclonus
1	28) Neurological involvement during medical diseases: liver, renal, or respiratory failure, metabolic or ionic disorders, hormonal disorders, disorders of connective tissue, autoimmune disorders, deficit of vitamins
Hrs	Practice
2	multiple choice exercise re the first part of the lessons

PREREQUISITES	Neuroanatomy, neurophysiology, Neuropathology, Neuropharmacology
LEARNING OUTCOMES	<p>An historical review of the evolution of knowledge on neurological diseases. To learn the Basics of the Clinical Method in Neurology. To understand the clinical and anatomical basis of the diseases of the central and peripheral nervous system and the muscle as well.</p> <p>To learn the basics of the diagnostic pathways of the most common disorders of central and peripheral nervous system and of the muscle.</p> <p>To gain adequate knowledge on the management of main central and peripheral nervous system diseases and the muscular system.</p> <p>To gain the ability to raise diagnostic hypotheses, based on the clinical history and neurological examination.</p> <p>To learn the methodology for performing a neurological evaluation and an examination of cognitive functions.</p> <p>To properly carry out appropriate diagnostic and therapeutic strategies, including the principles of evidence-based medicine.</p> <p>To critically evaluate neurological problems and controversies through consultation of the international scientific literature.</p>
ASSESSMENT METHODS	<p>The student's assessment involves a 90-minute written test, in which sixty multiple-choice questions about etiopathogenesis, clinical presentation, diagnostic pathways and differential diagnosis of the neurological disorders, and therapeutic approaches.</p> <p>The student should demonstrate that he/she has learned the basics of the clinical examination in neurology, the anatomo-clinical and pathophysiological aspects of neurological diseases. Furthermore the assessment will test whether the student has gained the basic knowledge to implement an appropriate diagnostic pathway, to formulate a prognosis, to establish a suitable therapeutic approach.</p> <p>To each of the 60 multiple choice questions will be assigned a 1 point score if the answer is correct, 0.5 points will be subtracted if the answer is wrong, 0 points if the answer is not indicated.</p> <p>The written test is considered passed with a minimum score of 36/60. The total score, if it is characterized by a non-integer numeric value, will be rounded to the upper unit.</p> <p>After the written test, on a different day or in the afternoon of the same day, if the written test has been carried out in the morning, an oral examination will be made, in which a clinical case will be presented.</p> <p>The student is required to formulate the most appropriate diagnostic hypotheses, to undertake a diagnostic pathway, and to evaluate possible differential diagnoses, to set up a therapy, and to establish a prognosis.</p> <p>The following will be evaluated: a) Exposure clarity; B) the correct use of the Italian language; C) evidence of having learned the main etiopathogenic and pathophysiologic mechanisms of neurological diseases, when required, and having acquired the theoretical and practical tools to formulate a diagnostic hypothesis, a prognostic evaluation and a therapeutic indication.</p> <p>At the oral test, a thirty-one score will be awarded, ranging from 0 to 30. The written test score will then be added to the oral test. The exam will be considered approved if the candidate has obtained at least a combined score of 54/90 (corresponding to 18/30); If the candidate had achieved the maximum score in both tests, with an oral presentation judged by the committee particularly brilliant, thanks also to the description of diagnostic-therapeutic pathways and / or innovative physiopathological mechanisms, then the candidate will also be awarded cum laude.</p> <p>In accordance with the following link: http://www.unipa.it/scuole/dimedicinaechirurgia/.content/documenti/Table-Evaluation-Italian.pdf the meaning of individual votes can be described as follows:</p> <p>A A+ EXCELLENT (30-30 cum laude) Excellent knowledge of teaching content; The student demonstrates high analytical-synthetic ability and is able to apply knowledge to solve problems of high complexity.</p> <p>B VERY GOOD (27-29) Excellent knowledge of the content of teaching and excellent language skills; The student demonstrates analytical-synthetic ability and can apply knowledge to solve problems of medium complexity and, in some cases, also high.</p> <p>C GOOD (24-26) Good knowledge of the content of teaching and good language skills; The student is able to apply knowledge to solve problems of medium complexity.</p> <p>D SATISFACTORY (21-23) Discreet knowledge of the contents of the teaching, in some cases limited to the main topics; Acceptable ability to use the specific language of the discipline and to apply the acquired knowledge independently.</p> <p>E SUFFICIENT (18-20) Minimum knowledge of the content of teaching, often limited to the main topics; Modest ability to use the specific language of the</p>

	discipline and to apply the acquired knowledge independently F FAILED (rejected) Does not have an acceptable knowledge of the main contents of the lesson; Very little or no ability to use the specific
EDUCATIONAL OBJECTIVES	The training goal of the neurological module is to provide students with theoretical and practical tools for: i) understanding of neurological diseases, including them in the context of medical sciences in general; (ii) formulating a diagnostic hypothesis, a prognostic evaluation, and an indication of treatment in the field of nervous system diseases. This latter goal will be pursued through a detailed analysis of the various pathologies, including the description of clinical cases. The principles of evidence-based medicine will also be used, through diagnostic algorithms. It will be emphasized on the topics related to the mechanisms that determine the various diseases of the nervous system. The student will learn how to apply practically the acquired knowledge.
TEACHING METHODS	Lectures and practical sessions with discussions on clinical cases. One week of attendance in the department, neurophysiopathology and outpatient clinics is scheduled in the internship programed by the degree course.
SUGGESTED BIBLIOGRAPHY	1.A. Federico, C. Caltagirone, L. Provinciali, G. Tedeschi – Neurologia pratica – EdiSES, 2014. 2.2. Samuels & Feske – Office Practice of Neurology, 2nd Edition 2003 – Churchill Livingstone 3.3. Dispense relative ad alcuni degli argomenti in programma preparate dal docente del corso

SYLLABUS

Hrs	Frontal teaching
2	Opening Lecture. The clinical method in neurology. basics of the anatomy and clinical physiology of the nervous system. Motor function and sensitivity
2	Major neurological syndromes (eg, pyramidal, extrapyramidal, ataxia, spinal cord syndromes, somatosensory deficits)
2	The cranial nerves and related disorders (deficits of the: oculomotion, vision, speech, motility and facial sensitivity, motility of the tongue, swallowing, equilibrium [dizziness and vertigo], hearing, smell)
2	Higher nervous functions. The memory. Disorders of consciousness. The locked-in syndrome
2	The clinical history in neurology. Neurological examination and the gait evaluation. Biological and antibody diagnostic workup. Instrumental work-up (EMG / ENG, Evoked Potentials, EEG, TC, RMN, PET, SPECT, special investigations)
2	The lumbar puncture and the examination of cerebrospinal fluid. Genetic tests in Neurology
2	Cerebrovascular diseases I (general aspects, genetics and epidemiology - pathogenesis, clinical, therapy and management of ischemic stroke - lacunar infarction - uncommon causes of stroke)
2	Cerebrovascular diseases II (cerebral hemorrhage - subarachnoid hemorrhage - cerebral venous thrombosis) The problem of primary and secondary prevention of cerebrovascular diseases. The therapy. Vascular and / or multifactorial dementia
2	Extrapyramidal Disorders I (Parkinson's Disease and parkinson-plus diseases).
2	Extrapyramidal Disorders II: non parkinsonian movement disorders: dyskinesias, dystonias, tics, myoclonus, restless leg syndrome; Huntington's disease; The syndrome of Gilles de la Tourette; movement disorders during sleep
2	Neurology in the Emergency Unit. Headache, migraine and neuralgia
2	Infectious diseases of the Nervous System: Meningitis and Encephalitis
2	Neuromuscular disorders I: motoneuron diseases
2	Neuromuscular disorders II: disorders of the peripheral nerves (polyneuropathies, multi-neuropathies, mono-neuropathies)
2	Neuromuscular disorders III: myasthenia gravis and myasthenic syndromes; muscle dystrophies and myopathies - myositis
2	Dementia I: cognitive assessment - screening tests - mild cognitive impairment and Alzheimer's Disease
2	Dementia II: Frontotemporal degeneration and Dementia - Lewy's Dementia and Cognitive Disorders in Extrapyramidal Diseases.
2	Dementia III: - other causes of dementia and normal pressure hydrocephalus - Management of diseases characterized by cognitive decline. Dementing disorders at the terminal stage
2	Spinal cord diseases. Malformative diseases of the Nervous System Disorders and neural tube defects.
2	Tumors of the Nervous System and Paraneoplastic Syndromes
2	Demyelinating Diseases and Multiple Sclerosis. Autoimmune encephalitis
2	Neurogenetic diseases: dominant and recessive hereditary atassies. Hereditary neuropathies.
2	Epilepsy. Sleep disorders
2	The Stroke Unit - The Neurorehabilitation Unit and the SUAP (Special Permanent Hospital Units) – The Home Care - The Neurological Hospice

SYLLABUS

Hrs	Frontal teaching
2	The conversion disorder and other diseases at the boundaries between Neurology and Psychiatry- Neurology and the Internal Medicine I (cardiology - pneumology)
2	Neurology and the Internal Medicine II (gastroenterology - rheumatology - hematology - hepatology - nephrology)
2	Metabolic Encephalopathies and Transmissible Encephalopathies
Hrs	Practice
2	Practical session I: discussion of clinical cases
2	Practical session II: discussion of clinical cases
2	Simulation Test of the Final Exam – Closing Remarks