

CLINICAL NEUROSCIENCES (ML0162)

1. language

English.

2. course contents

Coordinator: Prof. SERENELLA SERVIDEI

Year Course: 4

Semester: second

UFC: 12

Modules and lecturers:

- CLINICAL PHYSIOLOGY I (ML0167) - 1 ufc - ssd BIO/09

Prof. Maria Vittoria Podda

- GENERAL PRINCIPLES OF NEURORADIOLOGY (ML0166) - 1 ufc - ssd MED/37

Prof. Giuseppe Maria Di Lella, Simona Gaudino

- GENERAL PRINCIPLES OF NEURORADIOLOGY PROFESSIONAL TRAINING (ML0165) - 1 ufc - ssd MED/37

Prof. Luca Ausili Cefaro, Giuseppe Maria Di Lella, Rosellina Russo, Simona Gaudino, Matia Martucci, Rosalinda Calandrelli, Tommaso Verdolotti

- NEUROLOGY (ML0169) - 3 ufc - ssd MED/26

Prof. Anna Rita Bentivoglio, Camillo Marra, Massimiliano Mirabella, Serenella Servidei

- NEUROLOGY PROFESSIONAL TRAINING (ML0163) - 1 ufc - ssd MED/26

Prof. Massimiliano Mirabella, Serenella Servidei, Catello Vollono, Anna Rita Bentivoglio, Aldobrando Broccolini, Davide Quaranta, Marco Luigetti

- NEUROSURGERY (ML0170) - 2 ufc - ssd MED/27

Prof. Francesco Doglietto, Gianpiero Tamburrini, Massimiliano Visocchi, Enrico Marchese, Alessandro Olivi

- NEUROSURGERY PROFESSIONAL TRAINING (ML0164) - 1 ufc - ssd MED/27

Prof. Giuseppe Maria Della Pepa, Enrico Marchese, Francesco Doglietto, Gianpiero Tamburrini, Nicola Montano, Luca Massimi, Giovanni Sabatino

- PSYCHIATRY (ML0168) - 2 ufc - ssd MED/25

Prof. Gabriele Sani, Giovanni Camardese, Luigi Janiri

3. BIBLIOGRAPHY

- Harrison's neurology in clinical medicine. Hauser SL; McGraw Hill, 4th Edition

- Synopsis of psychiatry. Kaplan HI and Sadock BJ; Wolters Kluwer, 12th Edition

- Neuroscience 6th edition. Dale Purves, George J Augustine, David Fitzpatrick, William C. Hall, Anthony-Samuel Lamantia, L.E. White, Richard D. Mooney, Michael L. Platt, Leonard E. White-, Oxford University Press

All the documentation presented in the classroom is to be considered mandatory learning material and will be made available to the students.

4. LEARNING OBJECTIVES

The course is divided in 5 strongly integrated didactic modules with the following objectives

- to give students basic knowledge of etiology, pathogenesis, diagnosis, management, treatment and prevention of diseases in Neurology, Neurosurgery and Psychiatry

- to teach students to develop a correct approach to diagnosis and management of common and rare disorders, to recognize symptoms and formulate differential diagnosis based on signs and

symptoms, to use and interpret common diagnostic exams in Neurophysiology and Neuroradiology and to develop a systematic approach to manage both common and rare diseases

- to provide students with the skills and knowledge to initiate the development of a patient-specific plan of care
- to help students to improve their ability to think, both critically and analytically
- to help students to develop professional responsibility as individuals and as a team member, with other members and with patients and families

Applying knowledge and understanding – Students will have the opportunity to rotate in Neurology and Neurosurgery wards, Stroke unit, Day Hospital, outpatient clinics, Neurophysiopathology Unit (EEG, EMG, Evoked Potentials), Neuropsychology Unit and Neuroradiology. Students are required to:

- observe patient interview
- independently obtain and present a complete neurological history
- observe neurological examination
- independently perform neurological examination
- present and document patient cases both in neurology and in neurosurgery
- write patient note both in English and in Italian

Making judgements – The students will develop abilities to hypothesize and propose a clinical diagnosis, to elaborate a reasoning on possible differential diagnoses and consequently to suggest the most appropriate clinico-diagnostic studies.

Communication skills – The students will learn to communicate and explain diagnostic hypotheses, diagnostic steps, diagnosis and prognosis and clinical-therapeutic decisions. They also will learn to interact with the patients taking in the right consideration their complains and their opinions on the clinical care. The students will also acquire the competences to discuss cases in the context of multidisciplinary teams.

Learning skills - The students will learn to keep up-to-date, to autonomously review and discuss relevant clinical literature on specific neurological problems.

5. prerequisites

The students are requested to have basic knowledge of anatomy, physiopathology, pharmacology and the most common disorders in clinical medicine.

6. TEACHING METHODS

The teaching will take place through: a) classroom lectures related to the program; b) professional training with rotation in Neurology and Neurosurgery wards, Stroke unit, Day Hospital, outpatient clinics, Neurophysiopathology Unit (EEG, EMG, Evoked Potentials), Neuropsychology Unit and Neuroradiology; c) Elective Educational Activity: 1) optional projects 2) internship d) self-learning, e) problem-based learning,

Knowledge and understanding – During classroom lectures the students will have direct interaction with the teachers and they will be stimulated to ask questions for a better comprehension of the taught topics and to answer questions on the content of the lesson.

Applying knowledge and understanding – Either in class or during the professional training, the students will be invited to express their opinions, doubts, hypotheses. With the opportunity to rotate in the different fields, they will be able to gain enough knowledge to mature their own ideas in an integrated multidisciplinary contest.

Making judgements – Either in class or during the professional training, the students will be stimulated to actively participate in problems solving and clinical management of real cases, even directly interacting with the patients.

Communication skills – The students will learn how to communicate with the patients, using a clear and comprehensible language. They will also be encouraged to present and discuss real clinical cases using the most appropriate language in the specific, medical or scientific, contest.

Learning skills – The students will be requested to develop and expand their knowledge by studying not only on provided didactic material and suggested textbooks, but also by consulting web available sources (i.e. pubmed, UpToDate, etc...). The students will learn how to integrate the theoretical knowledge in the real medical life.

7. OTHER INFORMATIONS

Professors receive students after their scheduled lessons or by appointment by writing an email.

8. METHODS FOR VERIFYING LEARNING AND FOR EVALUATION

The exam is oral and focuses on topics related to all five disciplines (modules) according to program in all its parts reported in the Syllabus. The questions are related to the contents of each of the five didactic modules. The student must pass the exam in each discipline. The final grade is obtained on the basis of the weighted average of the grades obtained in each discipline proportional to the number of CFU/hours. Grades are expressed in thirtieths. To obtain the maximum grade cum laude the student must have achieved at least 30 in all five disciplines. To take the exam, students must have participated in 2/3 of the professional training in each disciplines (Neurology, Neurosurgery, and Neuroradiology).

The oral exam will allow to verify

- theoretical knowledge and understanding of the various topics
- ability to apply knowledge by discussing clinical cases, differential diagnosis, therapeutic hypotheses. This part is also verified during the professional training activity
- ability to make judgments in the discussion of clinical cases or regarding different points of view in clinical matters
- communication skills by evaluating the aptitude to present in an organized manner and illustrate a topic in all its main aspects
- learning skills: during the lessons students are encouraged to autonomously integrate their knowledge by consulting PubMed materials and other web sources. With the oral exam, students can demonstrate their capacities in a topic of their choice.

9. program

Neurology

Approach to the patient with neurologic diseases
Neuropsychology and cognitive functions
The neurology of aging
Dementia and related disorders
Disorders of motility
Cerebellar syndromes
Parkinson disease and related disorders
Chorea and dystonia
Diseases of spinal cord
Diseases of motor neurons
Diseases of peripheral nerves
Principle of clinical myology
Muscular dystrophies and related disorders
Mitochondrial Myopathies
Inflammatory Myopathies
Paraneoplastic syndromes
Myasthenia gravis and related disorders
Cerebrovascular diseases
Headache and pain
Multiple sclerosis and related disorders
Acquired metabolic disorders of the Nervous System
Encephalitis
Neurophysiology of Central Nervous System
Neurophysiology of Peripheral Nervous System
Epilepsy and disorders of consciousness

Neurosurgery

Historical aspects of Neurosurgery and Physiopathology of the intracranial system
Clinical examination of the nervous system and correlative neuroanatomy

Diagnostic tests: CSF examination, electrodiagnostic test, CT, MRI, DSA, PET
New tools in Neurosurgery
Hydrocephalus and its treatment
Gliomas and metastatic brain tumor
Cerebellopontine angle tumors and posterior fossa tumors
Sellar and parasellar tumors
Meningiomas and tumors of the scalp and skull
Spinal tumors, epidermoid and dermoid tumors, tumors in the region of pineal gland
Adjunctive therapy of the CNS tumors
Intracranial aneurysms
Vascular malformation and fistulas (cerebral and spinal)
Trauma (biomechanics, pathophysiology and neurological evaluation)
Traumatic intracranial hematomas and spinal trauma
Intervertebral disc disease and other spinal disorders
Pain and its therapy (trigeminal neuralgia, chronic intractable pain)
Epilepsy surgery
Disorders of peripheral nervous system
Developmental anomalies: cranial and spinal disraphism
Chiari malformations, intracranial arachnoid cysts, Dandy-Walker Syndrome
Craniosynostosis and hydrocephalus
Translational research in Neurosurgery

General principles of neuroradiology

General principles of Neuroradiology
Cerebrovascular diseases
Dementia and other neurodegenerative disorders
Multiple sclerosis and related disorders
Brain tumors
Trauma

Psychiatry

Principles of general psychopathology
The psychiatric examination
Nosology in Psychiatry
Diagnostic issues in Psychiatry
Schizophrenia spectrum disorders
Other psychotic disorders
Depressive disorders
Bipolar disorders
Anxiety disorders
Somatic symptom and related disorders
Dissociative Disorders
Trauma and stressor-related disorders
Addictive disorders and substance-related disorders
Eating disorders
Obsessive-compulsive and related disorders
Disruptive, impulse control and conduct disorders
Psychosexual and Personality disorders
Pharmacotherapy in Psychiatry
Psychotherapy in Psychiatry
Rehabilitation and community Psychiatry

Clinical Physiology I

The neural correlates of high order brain functions and their alterations in neurological diseases:
-motor control;
-attention and executive functions;
-decision making;
-brain rhythms, sleep and wakefulness;
-learning and memory;
-harnessing neuroplasticity for clinical applications