



COURSE DATA

Data Subject

Code	34484
Name	Pathology of the nervous system
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Faculty of Medicine and Odontology	5	First term

Subject-matter

Degree	Subject-matter	Character
1204 - Degree in Medicine	14 - Human clinical training III	Obligatory

Coordination

Name	Department
ROLDAN BADIA, PEDRO LUIS	40 - Surgery
SEVILLA MANTECON, MARIA TERESA	260 - Medicine

SUMMARY

GENERAL FEATURES

- "Pathology of the nervous system" is a subject taught jointly by the Departments of Medicine (Neurology) and Surgery (Neurosurgery).
- The distribution of contents and teaching load is: 60% Neurology and 40% Neurosurgery

OBJECTIVES

The general objective is to train professionals with sufficient theoretical and practical knowledge, attitudes and skills that enable them to recognize and manage the most frequent diseases of the nervous system that the general practitioner has to face in daily clinical practice.



- Know the most relevant and frequent diseases of the nervous system, their importance and prevalence in the population.
- Understand its pathogenic and pathophysiological mechanisms.
- Guide a syndromic diagnosis and make a differential diagnosis by analyzing the information of the patient and her environment.
- Know the diagnostic techniques used in the management of these patients, the bases on which they are based, their usefulness, indications and limitations.
- Know the main therapeutic options available for its medical or surgical treatment and its prevention, as well as the bases on which its application is based.
- Evaluate the prognosis and learn to transmit this information to the patient and her family.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

There are no specified enrollment restrictions with other subjects of the curriculum.

1204 - Degree in Medicine

- Obtain and elaborate a clinical history with relevant information.
- Perform a physical examination and a mental health assessment.
- Have the capacity to make an initial diagnosis and establish a reasonable strategy of diagnosis.
- Establish the diagnosis, prognosis and treatment, applying principles based on the best information available and on conditions of clinical safety.
- Indicate the most accurate therapy in acute and chronic processes prevailing, as well as for terminally ill patients.
- Plan and propose appropriate preventive measures for each clinical situation.
- Acquire proper clinical experience in hospitals, health care centres and other health institutions, under supervision, as well as basic knowledge of clinical management focused on the patient and the correct use of tests, medicines and other resources available in the health care system.
- Know how to use the sources of clinical and biomedical information available, and value them critically in order to obtain, organise, interpret and communicate scientific and sanitary information.



- Know how to use IT in clinical, therapeutic and preventive activities, and those of research.
- Understand the importance and the limitations of scientific thinking in the study, prevention and management of diseases.
- Organizar y planificar adecuadamente la carga de trabajo y el tiempo en las actividades profesionales.
- Capacidad para trabajar en equipo y para relacionarse con otras personas del mismo o distinto ámbito profesional.
- Criticism and self-criticism skills.
- Capacity for communicating with professional circles from other domains.
- Acknowledge diversity and multiculturality.
- Consideration of ethics as a fundamental value in the professional practise.
- Working capacity to function in an international context.
- Recognises, diagnoses and guides the management of the main pathologies affecting the central and peripheral nervous systems.
- Knows how to perform a complete anamnesis, focused on the patient and orientated to various pathologies, interpreting its meaning.
- Knows how to evaluate modifications in clinical parameters at different ages.

The student at the end of their training period must have acquired:

- The knowledge to face the patient with symptoms that involve the nervous system and the aptitude to carry out the care of the patient with neurological-neurosurgical pathology.
- Establish an order of problems and resources to plan a scale of priorities and objectives.
- Recognize and treat the most common neurological diseases, assessing those of vital risk and urgent processes. Know the criteria for referral to specialized services.
- Apply preventive medicine to reduce the frequency of neurological diseases.
- Manage the sources of specific bibliographic information using the means at their disposal.
- Evaluate the prognosis and know how to transmit this information to the patient and her relatives.

DESCRIPTION OF CONTENTS



1. THEORETICAL TEACHING

The program will consist of thematic units divided into 23 lessons (14 Neurology and 9 Neurosurgery)

Neurology Lessons

1. Headache and other craniofacial pain.
2. Cerebrovascular diseases.
3. Epilepsy.
4. Impairment of Consciousness. Sleep disorders. Coma. Brain death.
5. Nervous System Infections.
6. Encephalopathy: metabolic, toxic, and autoimmune.
7. Multiple sclerosis and other demyelinating diseases.
8. Diseases associated with movement disorders (Parkinson's disease and other extrapyramidal diseases).
9. Dizziness. Central and peripheral vertigo. Cerebellar ataxias.
10. Cognitive impairment and Dementia.
11. Non-surgical acute and chronic myelopathies. Motor neuron diseases.
12. Peripheral nervous system diseases I: Neuropathies.
13. Peripheral nervous system diseases II: Muscular dystrophies and other muscular diseases.
14. Peripheral nervous system diseases III: Myasthenia gravis. Cranial nerve disorders. Autonomic nervous system.

Neurosurgery Lessons

15. Intracranial pressure and cerebral circulation. Cranial hypertension. Hydrocephalus in the adult.
16. Pediatric neurosurgery: hydrocephalus and craniopathies. Spina bifida and other developmental disorders.
17. Concussion. Traumatic intracranial hematomas.
18. Post-traumatic acute intracranial hypertension. Secondary and tertiary injuries.
19. Supratentorial brain tumors: topographic syndromes. Clinic, diagnosis and treatment.
20. Infratentorial brain tumors: topographic syndromes. Clinic, diagnosis and treatment.
21. Neurosurgical cerebrovascular disease: aneurysms and AVMs.
22. Degenerative, traumatic and tumor spinal cord pathology: spinal injuries. Spinal compression syndrome. Syringomyelia. Peripheral nerves.
23. Functional and stereotactic neurosurgery: neurosurgical treatment of pain, epilepsy, dyskinesias and psychosurgery. Navigation. Image-guided surgery.

2. SEMINARS AND WORKSHOPS

(2-hour seminars)

Neurology

1. Anamnesis and examination. The neurological clinical method.
2. Assessment of the patient with stroke.
3. Assessment of the patient with epilepsy, use of video EEG.
4. Assessment of the patient with cognitive impairment



5. Assessment of the patient with neuromuscular pathology.
6. Evaluation of the patient with headache. Evaluation of the patient with movement disorders.
7. Optional voluntary seminar: introduction to research.

Neurosurgery

Theoretical-practical aspects for the management of:

8. Brain tumors: topographic syndromes. Imaging diagnosis. AP markers.
9. TBI: Neuromonitoring. Severe TBI. Outcome.
10. Cerebrovascular: Types of aneurysms and vascular malformations
11. Clinical aspects of the degenerative, tumor and traumatic spine. The FBSS.
12. Clinical aspects of pediatric processes (hydrocephalus), functional (pain, epilepsy, psychosurgery and dyskinesias). Radiosurgery. Neuronavigation and DBS.

3. CLINICAL CASES

Neurology

The clinical cases will be taught in the thematic context of the seminars and clinical practices.

Neurosurgery

The clinical cases of Neurosurgery will be seen during the clinical practices in each Hospital Center on the practical aspects of the Theory in general.

4. CLINICAL PRACTICES

Objectives:

Bringing the student closer to the daily hospital neurological / neurosurgical pathology of admitted patients, generally with acute pathology.

Know the most chronic neurological / neurosurgical pathology that is reviewed in consultations.

They will be carried out in a supervised manner in the different Neurology and Neurosurgery hospital units: hospitalization room, outpatient consultations, technical laboratories and operating rooms.

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Seminars	26,00	100
Theory classes	26,00	100
Clinical practice	23,01	100
TOTAL	75,01	

TEACHING METHODOLOGY

The teaching methodology is based on the development of several types of activities: a) theoretical content, b) practical content (seminars and clinical cases), c) non-face-to-face teaching, and d) evaluation, which includes taking face-to-face exams and evaluation of the activities carried out.

In the classes with theoretical content, a global vision of each topic is exposed, with the appropriate audiovisual support, which includes the general concepts, their foundations and the most relevant aspects related to the diagnosis, prognostic evaluation, treatment and prevention of diseases. nervous system diseases.

In the classes with practical content, the decision processes involved in the differential diagnosis and in the treatment of patients are addressed, underlining the relevant role of the anamnesis and physical examination and the appropriate choice of complementary examinations and the different therapeutic options . In relation to these, two fundamental aspects are highlighted, on the one hand, the information they can provide and their limitations, and on the other the indications for its realization. For this, data and results of real explorations will be available in order to discuss the most relevant aspects of them. This discussion will take place in seminars and clinical case presentation sessions.

EVALUATION

a) Carrying out an objective test on the contents developed during the course. The test will consist of “multiple choice” questions on the subject matter (each question will have four possible answers, only one of which will be valid). The correct questions will have a value of 1 point. A point or fraction will be subtracted for every three incorrect answers. Blank answers do not score.

b) The contents of the questions will be in proportion to the topic taught (60% Neurology, 40% Neurosurgery).

c) The content of the questions will be in relation to the topics taught in the classes and seminars, all supported by reference books.

d) The exam will be the same for all groups of the subject.



e) In the practical modality there will not be a specific exam, attendance, student interest and participation will be evaluated.

f) To pass, it will be necessary to exceed 50% of the overall score and the corresponding 50% of each of the areas of knowledge (Neurosurgery and Neurology). If only one of the two parts has been approved, the subject will be suspended, but from the approved part (Neurology or Neurosurgery) the grade will be saved for the second call. The note is not saved for calls or later years.

g) Attendance at Clinical Practices/seminars is mandatory. Unjustified non-attendance to more than 20% of the sessions will make it impossible to pass the course.

It is a requirement to access the advance call for this subject is that the student has completed all of their practices.

REFERENCES

Basic

- NEUROLOGÍA

LIBROS GENERALES DE MEDICINA INTERNA

- Harrison: Principios de Medicina Interna. McGraw-Hill
- Farreras: Medicina Interna. Hartcourt

LIBROS DE TEXTO DE NEUROLOGÍA

- Adams y Victor: Principios de Neurología. McGraw-Hill. 9ª edición
- Bradley W: Neurología Clínica. Elsevier. 5ª edición
- Misulis E, Head Thomas. Netter Neurología Esencial. Elsevier Masson
- Rohkaman: Neurología texto y atlas. Editorial Panamericana, 3ª edición

NEUROCIRUGÍA

- Greenberg M.S. Handbook of Neurosurgery. Thieme. 79ª ed. 2021. Biblioteca.
- Greenberg M.S. Manual de Neurocirugía. Ed Journal, 2013. 2ª ed de la 7ª en inglés. Biblioteca.
- Bartomeus Jene, F. Nociones básicas de Neurocirugía. Pub. Permanyer. Lab Esteve. 2ª ed. 2011.
- Izquierdo Rojo JM, Martín Laer R, Punto Rafael JI. Neurocirugía básica para residentes. www.senec.org (página web de la Sociedad Española de Neurocirugía).

ADDENDUM COVID-19



This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

Siguiendo las recomendaciones del Ministerio, la Consellería y el Rectorado de nuestra Universidad, para el período de la "nueva normalidad", la organización de la docencia para el primer cuatrimestre del curso 2021-22, seguirá un modelo híbrido, donde tanto la docencia teórica como práctica se ajustará a los horarios aprobados por la CAT pero siguiendo un modelo de Presencialidad / No presencialidad en la medida en que las circunstancias sanitarias y la normativa lo permitan y teniendo en cuenta el aforo de las aulas y laboratorios docentes. Se procurará la máxima presencialidad posible y la modalidad no presencial se podrá realizar mediante videoconferencia cuando el número de estudiantes supere el coeficiente de ocupación requerido por las medidas sanitarias. De manera rotatoria y equilibrada los estudiantes que no puedan entrar en las aulas por las limitaciones de aforo asistirán a las clases de manera no presencial mediante la transmisión de las mismas de manera síncrona/asíncrona via "on line".