

**COURSE DATA****Data Subject**

<b>Code</b>	34484
<b>Name</b>	Diseases of the nervous system
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	6.0
<b>Academic year</b>	2024 - 2025

**Study (s)**

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

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1204 - Degree in Medicine	14 - Human clinical training III	Obligatory

**Coordination**

<b>Name</b>	<b>Department</b>
SEVILLA MANTECON, MARIA TERESA	260 - Medicine
VANACLOCHA VANACLOCHA, VICENTE	40 - Surgery

**SUMMARY****GENERAL FEATURES**

- "Pathology of the nervous system" is a single 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 basis on which its application is based.
- Evaluate the prognosis and learn to transmit this information to the patient and their 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 enrolment restrictions for other subjects of the curriculum.

## COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

### 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.
- Proper organisation and planning of the workload and timing in professional activities.
- Team-working skills and engaging with other people in the same line of work or different.
- 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.

## **LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)**

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

- 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 medical services.
- Apply preventive medicine to reduce the frequency of neurological and neurosurgical 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 their relatives.

## **DESCRIPTION OF CONTENTS**

### **1. LECTURES**

The syllabus will contain twenty-three topics (14 Neurology and 9 Neurosurgery). Each lecture will last 60 minutes.

#### **NEUROLOGY TOPICS**

1. Headaches and craniofacial pain



2. Cerebral vascular diseases.
3. Epilepsy.
4. Consciousness disorders: sleep disorders. Coma. Brain death.
5. Infections of the Nervous System.
6. Metabolic encephalopathies due to toxic, deficiency, and autoimmune origin.
7. Multiple sclerosis and other demyelinating diseases.
8. Diseases that cause movement disorders (Parkinson's disease and other extrapyramidal diseases).
9. Dizziness. Central and peripheral vertigo. Cerebellar ataxia.
10. Cognitive impairment and Dementia.
11. Non-surgical acute and chronic myelopathies. Motoneuron diseases.
12. Diseases of the peripheral nervous system I: Neuropathies.
13. Diseases of the peripheral nervous system II: Muscular dystrophies and other muscular diseases.
14. Diseases of the peripheral nervous system III: Myasthenia gravis. Cranial nerve disorders. Autonomic nervous system.

#### NEUROSURGERY TOPICS

15. Intracranial pressure and cerebral circulation. Intracranial hypertension. Benign intracranial hypertension. Normal pressure hydrocephalus.
16. Paediatric Neurosurgery.
17. Head injuries I.
18. Head injuries II.
19. Brain tumours I
20. Brain tumours II.
21. Neurosurgical cerebrovascular disorders.
22. Degenerative, traumatic and tumoral spine and spinal cord disorders: spinal cord injuries. Spinal cord compression syndrome. Syringomyelia. Peripheral nerves.
23. Functional neurosurgery.

## 2. SEMINARS AND WORKSHOPS

Seminars: Each will last 1 hour 30 minutes.

#### NEUROLOGY SEMINARS

1. Anamnesis and neurological 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 disorders.
6. Assessment of the patient with headache.
7. Assessment of the patient with movement disorders.
8. Optional seminar: introduction to research.

#### NEUROSURGERY SEMINARS

9. Intracranial pressure. Hydrocephalus.
10. Paediatric Neurosurgery.



11. Head injuries.
12. Brain tumours.
13. Neurosurgical vascular disorders.
14. Clinical syndromes of the spine.
15. Functional Neurosurgery.

### 3. CLINICAL CASES

#### NEUROLOGY

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

#### NEUROSURGERY

The neurosurgical clinical cases will be seen during the clinical practices in each Hospital.

### 4. CLINICAL PRACTICES

Objectives:

Bringing the student closer to admitted patients' daily Hospital neurological/neurosurgical diseases. Know the neurological/neurosurgical diseases attended in the outpatient clinics.

They will be supervised in the different Neurology and Neurosurgery hospital units: wards, outpatient clinics, 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
Study and independent work	55,00	0
Resolution of case studies	10,00	0
Resolution of online questionnaires	10,00	0
<b>TOTAL</b>	<b>150,01</b>	

### 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 evaluating the activities carried out.





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

In the classes with practical content, the decision processes involved in the differential diagnosis and the treatment of patients will be 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 complementary examinations, 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 authentic explorations will be available to discuss the most relevant aspects of them. This discussion will take place in seminars and clinical case presentation sessions.

The gender perspective, the respect for diversity, and the sustainable development goals (SDGs) will be incorporated into teaching whenever possible.

## EVALUATION

### **Theoretical teaching evaluation** (50% of the overall assessment)

- a) Written exam on all the contents of the 23 theoretical topics taught during the academic course. The exam will consist of 100 "test" type questions on the syllabus agenda, 60 for Neurology and 40 for Neurosurgery. Each question will have four answers, of which only one will be correct. Correct answers will be worth 1 point. One 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 syllabus taught (60% Neurology, 40% Neurosurgery).
- c) The content of the questions will concern the topics taught in the lectures, supported all of this in the reference books.

### **Practical teaching evaluation** (50% of the overall assessment)

- d) Written exam with multiple choice questions related to the content of the seminars and clinical cases.
- e) Daily control of attendance at clinical practices and seminars at the affiliated Hospital. Attendance at practices and seminars will be mandatory. Failure to attend more than 20% of the seminars, clinical practices, or both will result in the impossibility of passing the course. The evaluation will be "passed" or "not passed" according to the result of the attendance control and the attitude shown. The teaching staff may demand complementary activities from students with absences, even if they are justified.

The written exam will be the same for all the course groups.

It will be necessary to pass 50% of the overall score and the corresponding 50% of each area of knowledge (Neurosurgery and Neurology). If only one of the two parts has been passed, the subject will be scored as failed, but the grade for the passed part (Neurology or Neurosurgery) will be saved for the second call. The score will not be held for subsequent calls or years.



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

Attendance at practical activities is mandatory. The student is considered to meet this requirement if they have attended a minimum of 80% of these activities and has adequately justified the impossibility of attending the remaining ones due to the occurrence of a cause of force majeure. It will be essential to comply with this requirement to pass the subject.

Students are reminded of the importance of carrying out evaluation surveys on all the teaching staff of the degree subjects.

## REFERENCES

### Basic

#### - NEUROLOGÍA

##### LIBROS GENERALES DE MEDICINA INTERNA

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

#### -NEUROCIRUGÍA

- Greenberg M.S. Handbook of Neurosurgery. Editorial Thieme. 7ª ed. 2010. Inglés
- Greenberg M.S. Manual de Neurocirugía. Editorial Journal, 2013. 2ª edición de la 7ª edición en inglés (ejemplares disponibles en la biblioteca).
- Bartomeus Jene, F. Nociones básicas de Neurocirugía. Publicaciones Permanyer. Laboratorios Esteve. 2ª edición 2011.
- Izquierdo Rojo JM, Martín Lázex R, Punto Rafael JI. Neurocirugía básica para residentes. [www.senec.org](http://www.senec.org) (página web de la Sociedad Española de Neurocirugía).

#### -RECURSOS e-Salut:

- . ClinicalKey Student Medicina, Odontología y Enfermería  
[ <https://uv-es.libguides.com/RecursosSalut> ]
- Acces Medicina  
[ [https://uv-es.libguides.com/Access\\_Medicina](https://uv-es.libguides.com/Access_Medicina) ]
- Médica Panamericana  
[ [https://uv-es.libguides.com/Medica\\_Panamericana](https://uv-es.libguides.com/Medica_Panamericana) ]

### Additional

#### - NEUROLOGÍA

##### LIBROS DE TEXTO DE NEUROLOGÍA (para consulta)

- Adams y Victor: Principios de Neurología. McGraw-Hill. 11ª 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**

**LIBROS DE CONSULTA**

- Greenberg's Handbook of Neurosurgery. Tenth Edition. Editorial Thieme. 2023. Inglés.
- Neurocirugía. Fundamentos. Ellenbogen R, Abdulrauf S y Sekhar L. Editorial Amolca. 2016 . Español.
- Fundamentals of Neurosurgery: A Guide for Clinicians and Medical Students. Joaquim AF, Ghizoni E, Tedeschi H y Ferrerira MAT. Editorial Springer-Verlag. 2019. Inglés.
- The essential Neurosurgery companion. Gasco J. Editorial Thieme 2013. Inglés.
- Differential Diagnosis in Neurology and Neurosurgery. A clinician's pocket guide. Sotirios A. Tsementzis, M.D., Ph.D. Editorial Thieme. 2000. Inglés.
- Neurosurgery Rounds: Questions and Answers. Shaya MR, Gragnaniello C y Nader R. Editorial Thieme. 2018. Inglés.