Universidad de Navarra

Clinical Cases in Neuroscience (Gr. Medicina)
Guía docente 2026-27

PRESENTACIÓN

Course description:

This course is a multidisciplinary introduction to the human nervous system that integrates neuroanatomy and neurophysiology with clinical neurology. First, an overview will introduce the student to the vocabulary, the basic organization and connections, and the hierarchical relationships between major structures. Second, regional neurosciences will consider the organization and relationships of the specific regional zones of the nervous system starting with the telencephalon, then diencephalon, brain stem, spinal cord, and the peripheral nervous system. Third, systemic neurosciences will consider the functional systems, starting with motor, then sensory systems, and higher functions. The course consists of 20 lectures and 3 conferences covering neuroanatomy, neurophysiology, gross and microscopic neuroanatomy, neuroimaging and the neurological examination, and 12 case studies that will correlate neuroanatomy and neurophysiology with clinical neurology.

Degree: Medicine

Module in the Degree Program: International Program

Year: Second and third

Trimester: Third

*Lecture rooms: C*lassrooms 12 and 13 expansion of the Science Library.

Lecture schedule: **22nd February to 10th March of 2027**.

Monday to Friday. From 19h to 21h.

Saturday. From 9h a 14h.

Exam: **17th March 2027. From 18h a 20h.**

Venue: University of Navarra School of Medicine, Pamplona, Spain.

Language: English

Instructors: **Ralph F. Jozefowicz, MD** (ralph_jozefowicz@urmc.rochester.edu). Profesor invitado. (Click for CV); **Carlos Sollero, MD** (Carlos_Sollero@URMC.Rochester.edu) Profesor invitado (Click for CV)

Department: School of Medicine.

Office: not applicable

Office Hours: not applicable

Module and subject matter: Module VI: Optional, Subject I: Optional

RESULTADOS DE APRENDIZAJE (Competencias)

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BASIC COMPETENCIES

BC20 – To acquire, under supervision, appropriate clinical experience in hospitals, health centers and other health institutions and to acquire basic knowledge of patient-centred clinical care and the appropriate use of tests, medicines and other health-system resources.

BC23 – To communicate in an effective and clear way, both when speaking and in writing, with patients, with family members, with media, and with other professionals.

BC24 – To establish good interpersonal communication skills to facilitate relating efficiently and sympathetically with patients, family members, media, and other professionals.

GENERAL COMPETENCIES

CG6 – To develop professional practice with respect to other health professionals, acquiring teamwork skills.

CG7 – To understand and recognize the structure and normal function of the human body at the levels of the molecule, cell, tissue, organ and system over the different stages of life and in both sexes.

CG9 – To understand and recognize the effects, mechanisms and manifestations of disease on the structure and function of the human body.

CG10 – To understand and recognize the causative agents and the risk factors that determine states of health and the development of disease.

CG15 – To have the capacity to prepare an initial diagnostic evaluation and to establish a reasoned diagnostic strategy.

CG17 – To establish diagnosis, prognosis and treatment, by application of principles based on the best information possible and on conditions of clinical safety.

CG38 – To be able to manage in international scientific and clinical settings to participate in translational research in the field of biomedicine.

SPECIFIC COMPETENICIES

CE36 – To know how to approach professional practice while respecting a patient's autonomy, beliefs and culture.

CE46 –To know about health planning and administration at world, European, Spanish and regional levels.

CE66 – To be able to make an oral or written presentation, in public, of scientific studies or professional reports.

CEO1 - Aprender el lenguaje médico en lenguas europeas

CE5 – To know basic principles of human nutrition.

COMPETENCIES SPECIFIC TO ELECTIVE SUBJECT MATTERS

CEO8 - Saber elaborar y exponer una presentación dirigida a profesionales de ámbitos científicos nacionales o internacionales.

CEO9 - Ampliar los conocimientos de la clínica práctica mediante pasantías complementarias en centros nacionales o internacionales.

CEO10 - Conocer algunos aspectos médicos con repercusión internacional.

PROGRAMA

Format	Topic	Lecturer
Lecture 1	Introduction to Neural Sciences 1	RFJ
Lecture 2	Introduction to Neural Sciences 2	RFJ
Case Study 4	“The Grounded Jockey”	RFJ/RW
Case Study 2	“The Burned Barbecue Chef”	RFJ/RW
Lecture 3	Neuroanatomy 1: Central Nervous System 1	RFJ
Lecture 4	Neuroanatomy 2: Central Nervous System 2	RFJ
Case Study 8	“The Comatose Custodian”	RFJ/RW
Case Study 9	“The Awkward Dairy Farmer”	RFJ/RW
Lecture 5	Neuroanatomy 3: Central Nervous System 3	RFJ
Lecture 6	Neuroanatomy 4: Peripheral Nervous System	RFJ
Conference 1	Gross Brain, Vasculature, Ventricular System	RW
Conference 2	Coronal and Horizontal Brain Anatomy	RW
Case Study 7	“The Silent Secretary”	RFJ/RW

Case Study 6	“The Bleary–Eyed Banker”	RFJ/RW
Conference 3	Neuroimaging	RW
Lecture 7	Neuroanatomy 5: Motor Systems	RFJ
Lecture 8	Neuroanatomy 6: Cerebellum and Basal Ganglia	RFJ
Case Study 10	“The Feeble Gardener”	RFJ/RW
Case Study 12	“The Tremulous Dentist”	RFJ/RW
Lecture 9	Neuroanatomy 7: Sensory Systems	RFJ
Lecture 10	Neuroanatomy 8: Special Senses 1	RFJ
Case Study 16	“The Numb Ballroom Dancer”	RFJ/RW
Case Study 18	“The Retired Cat Burglar”	RFJ/RW
Lecture 11	Neuroanatomy 9: Special Senses 2	RFJ
Lecture 12	Neuro exam 1: Mental status testing	RW
Lecture 13	Neuro exam 2: Cranial Nerves 1	RW
Case Study 5	“The Lumbering Lumber Yard Owner”	RFJ/RW
Case Study 22	“The Bruised Baker”	RFJ/RW
Conference 5	Aphasia and Dysarthria Videotape	RFJ

Lecture 14	Neuro exam 3: Cranial Nerves 2	RW
Lecture 15	Neuro exam 4: Motor, Sensory, Reflexes, & Gait	RW
Case Study 11	“The Weak School Custodian”	RFJ/RW
Case Study 14	“The Ataxic Accountant”	RFJ/RW
Conference 6	Abnormal Neurologic Findings Videotape	RFJ
Conference 7	Neurologic Case Vignette Videotapes	RFJ
Final Exam		

ACTIVIDADES FORMATIVAS

1. Classroom teaching activities:

Lectures

A series of highly-organized interactive lectures.

Clinical conferences during which gross and microscopic anatomy are presented

Clinical conferences during which normal and abnormal CT and MR images of the brain are reviewed.

Interactive clinical conferences during which patient videotapes will be viewed and discussed

Case-based learning seminars

Case studies will be discussed in small groups to localize the lesion and arrive at a diagnosis.

One-to-one tutorials

2. Personal work:

Reading of the course syllabus

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Review of brain and spinal cord anatomy in a brain atlas

EVALUACIÓN

1. Performance on a 60-question clinically-based MCQ exam at the end of the course

2. Ongoing assessment will be made of each student during the case study sessions. Each student will need to actively participate in these case-based discussions.

The final exam will take place on March 17th at 18h.

HORARIOS DE ATENCIÓN

At the end of every class I will be avaiable for students

BIBLIOGRAFÍA Y RECURSOS

Lecture, laboratory and case study syllabi

Duane E. Haines: Neuroanatomy in clinical context : an atlas of structures, sections, systems, and syndromes (9th ed.), 2015. Find it in the Library

This atlas is useful for consultation on neuroanatomical aspects of the case studies.

Felten DL, Shetty A: Netter's Atlas of Human Neuroscience: Teterboro, NJ: Icon Learning Systems, 2009. This atlas includes the classic Frank Netter drawings of the human nervous system, with updated descriptions for each figure and several new drawings. Find it in the Library

David L. Felten, Anil Shetty: Netter's atlas of neuroscience (2nd ed.) , 2010 (en español) Find it in the Library (e-book)

Ropper AH and Brown RH: Adams and Victor's Principles of Neurology. (9th ed.), New York, McGraw Hill, 2009 Find it in the Library (e-book)

Lecture, laboratory and case study syllabi

Haines DE: Neuroanatomy: An Atlas of Structures, Sections and Systems: (8th ed.), Philadelphia: Lippincott Williams and Wilkins, 2011. Find it in the Library. This atlas is useful for consultation on neuroanatomical aspects of the case studies.