

Faculty of Medicine



DENT1211 Neurosciences : neuroanatomy and neurophysiology

[45h+30h exercises] 6 credits

This course is taught in the 2nd semester

Teacher(s): Michèle Nicaise, Etienne Olivier
Language: French
Level: First cycle

Aims

The ultimate objectives and goals of the Neuroscience course are to provide an interdisciplinary approach to the understanding of the central nervous system. This course consists of 45 hours of lecture and 30 hours of laboratory sessions. In particular, the course presents knowledge in neuroanatomy and neurophysiology in the specific context of oral bioscience. At the end of this course, the students should be able:

- to describe the main structures of the central nervous system, together with their topographical relationships, the cranial nerves, the autonomic system and the five sensory organs,
- to be familiar with the neurophysiological basis of the sensory, motor and higher functions in humans,
- to demonstrate a comprehensive knowledge of the pathologic consequences that result from nervous system structural damages.

Main themes

The aim of the Neuroscience course is to provide the dental students with a sound understanding of the developmental, structural and functional neuroanatomy, together with the neurophysiological bases, necessary to progress in their curriculum, to develop good practical skills and to adapt to the rapidly changing scientific knowledge.

Content and teaching methods

Contents

Neuroanatomy deals with the human developmental and structural anatomy of the central, peripheral and autonomic nervous system and with sense organs. The Neuroscience course also presents knowledge and understanding of the main functional system of the brain.

Methods

Following an introduction by a clinical contextualisation, the topic is approached by analysis of anatomic preparations and of medical imaging documents integrated in PowerPoint, by a classic teaching procedure (drawings on the blackboard) and finally, if appropriate, by a feedback to clinical cases.

During practical sessions, coronal, transversal and sagittal sections of the brain are analyzed and dissection of head and the neck are performed; the aim is to develop and to improve the students' knowledge and understanding of head and neck anatomy.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: to be able to visualize the structures three-dimensionally; to have basic knowledge in anatomy (excluding neuroanatomy) and in general physiology about the action potential and synaptic transmission.

Assessment during the year: assessment of brain sections description two weeks after the practical session.

Aspects of assessment process: oral examinations with written preparation to evaluate the fulfilment of the stated objectives; describe encephalic structures and their topographical relationships; comment the origin, course, distribution and function of cranial nerves. Knowledge in neurophysiology will be assessed by mean of multiple choice questions.

Supports: textbooks, syllabus, drawings made during the lectures on the blackboard, complementary notes with drawings, photographs, legends of the most complicated topographical drawings, instructions for practical and examinations and, finally, documents, illustrations and links on the net (iCampus).

Other credits in programs

DENT12BA	Deuxième année de bachelier en sciences dentaires	(6 credits)	Mandatory
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