Course Specifications
Valid in the academic year 2018-2019

Structural Aspects of the Central Nervous System (D012509)

Course offerings and teaching methods in academic year 2018-2019

A (semester 2)  English  lecture  20.0 h
practicum  5.0 h

Lecturers in academic year 2018-2019

D'Herde, Katharina  GE05  lecturer-in-charge
Achten, Eric  GE16  co-lecturer

Offered in the following programmes in 2018-2019

Master of Science in Biomedical Sciences  5  A

Teaching languages

English

Keywords

macroscopic anatomy, central nervous system, structural and functional medical imaging.

Position of the course

This course focusses on in-depth knowledge of the macroscopic anatomy of the central nervous system, with emphasis on the topography. Insights are given in different methods of structural and functional imaging of the central nervous system with the aid of computertomography and magnetic resonance. Also capita selecta of the functional neuroanatomy are discussed.

Contents

- Macroscopic anatomy of the central nervous system.
- Vascularization of the central nervous system.
- Subarachnoid cavity and its access channels
- 3-D structure of the ventricle system
- Localization of the most important cortical areas and concept of hemispherical dominance.
- Functional anatomy of the basal ganglia and the limbic system.
- Functional anatomy of the cerebellum.
- Principles of angiography and computertomography, magnetic resonance.
- Techniques and protocols for imaging (MR, MRA, fMRI, MRS).

Initial competences

You can download the report of prerequisites on chttps://qas.oasis.ugent.be/oasisweb/curriculum/voorkennisvancursus?cursuscode=D000722&taal=nl.
You terminated with succes your bachelor in biomedical sciences or you have obtained the aimed competences in an alternative way.

Final competences

1 To be able to explain the semiology of the classical cerebrovascular strokes based on insights in the regional vascularization of the brain.
2 To be able to link in vivo anatomy of brain sections to documents of medical imaging (CT, MR).
3 To have insights in the functional anatomy of the basal ganglia, cerebellum and limbic system and to be able to discuss the semiology in case of disfunction.
4 To be able to demonstrate insight in the 3D structure of a human brain through recognizing anatomical structures on images of CT and MR.
5 To be able to describe the principles of angiography, computertomography and
magnetical resonance.
6 To have insight in protocols of imaging (MR, MRA, fMRI, MRS).

Conditions for credit contract
Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract
This course unit cannot be taken via an exam contract

Teaching methods
Lecture, microteaching, practicum

Learning materials and price
All learning material needed for neuroanatomy and functional medical imaging is available through Minerva.

References
• Fundamental Neuroscience for Basic and Clinical applications, third edition, Duane E. Haines, Elsevier 2006
• Neuroanatomy through clinical cases, Hal Blumenfeld, Sinauer Associates, Inc., 2010

Course content-related study coaching
In case of questions teachers can be contacted by mail.

Evaluation methods
end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period
Written examination with open questions, written examination with multiple choice questions

Examination methods in case of periodic evaluation during the second examination period
Written examination with open questions, written examination with multiple choice questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation
not applicable

Extra information on the examination methods
continuous assessment: written exam based on recognition of human preparations of the brain

Calculation of the examination mark
Medical imaging: 50%
Neuroanatomy: 50%
No partial exemptions are assigned.
Standard setting is applied for multiple choice questions.
In case of a result of less than 8/20 for one of the two parts and a global result of 10/20 or more, the global result will be reduced to 9/20. When the global result is less than 10/20, the result will be maintained as such.