BIO-483

Neuroscience: behavior and cognition

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Cursus	Sem.	Type
Computational Neurosciences minor	E	Opt.
Life Sciences Engineering	MA2, MA4	Opt.
Neuro-X minor	E	Opt.
Neuro-X	MA2	Opt.
Neuroprosthetics minor	E	Opt.
Neuroscience		Opt.

Language of teaching	English
Credits	5
Session	Summer
Semester	Spring
Exam	Written
Workload	150h
Weeks	14
Hours	**5 weekly**
Courses	3 weekly
Exercises	2 weekly
Number of positions	

Summary

The goal is to guide students into the essential topics of Behavioral and Cognitive Neuroscience. The challenge for the student in this course is to integrate the diverse knowledge acquired from those levels of analysis into a more or less coherent understanding of brain structure and function.

Content

Pathways into the visual brain
Perception and encoding
Attention and selective perception
Perception and consciousness
Understanding statistics
Stress and emotion
Learning and memory
Neurobiological mechanisms of memory
Emotional influences on cognitive functions
Psychiatric disorders
Structural and functional cortical neuroanatomy
Somatosensory perception and parietal cortex in human and non-human primates
Multisensory perception and parietal and premotor cortex in human and non-human primates
Perception and representation of visual space in the right hemisphere
Selected neurological disorders and human brain imaging
Bodily self-consciousness

Learning Prerequisites

Required courses

Neuroscience: from molecular mechanisms to disease (BIO-480)
Neuroscience: cellular and circuit mechanisms (BIO-482)

Assessment methods

Written exam

Resources

Bibliography

Purves D et al. Principles of Cognitive Neuroscience. 2008. Sinauer Associates: Sunderland, MA.

Gazzaniga MS. Cognitive Neuroscience. 2008 (3rd. Ed.) W. W. Norton & Company.

Ressources en bibliothèque

- Cognitive Neuroscience / Gazzaniga
- Principles of Cognitive Neuroscience / Purves

Moodle Link

- https://go.epfl.ch/BIO-483