Blanke Olaf, Herzog Michael, Sandi Carmen

| Cursus | Sem. | Type | Language of teaching | English |
| :---: | :---: | :---: | :---: | :---: |
| Computational Neurosciences minor | E | Opt. |  |  |
| Life Sciences Engineering | MA2, MA4 | Opt. | Credits | 5 |
| Neuro-X minor | E | Opt. | Session Semester | Summer Spring |
| Neuro-X | MA2, MA4 | Opt. | Exam | Written |
| Neuroprosthetics minor | E | Opt. | Workload Weeks | 150h |
| Neuroscience |  | Opt. | Hours | 5 weekly |
|  |  |  | Lecture Exercises | 3 weekly 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

Recommended 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.

## Moodle Link

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

