Summary
This optional course provides students who consider a specialization in Neuroengineering during their Master with a very broad overview of the many practical applications in the field. It should ensure these students to be well informed when choosing their specialization.

Content

- **General Introduction & Visual system** (Blanke)
  Exercises: To virtual reality (Blanke)

- **Vision: Perception, Neurophysiology, Neuroimaging** (Herzog)
  Exercises: Computer Vision (Herzog)

- **Hodgkin-Huxley model: from Ion channels to Mathematics** (Gerstner)
  Exercises: Neuron modelling (Gerstner)

- **Large scale modelling of the brain** (Markram)
  Exercises: Blue Brain (Schürmann)

- **Systems: Audition** (BMI professor)
  Exercises: Cochlear Implants (External)

- **Systems: Somatosensation and Optogenetics** (Petersen)
  Exercises: Optogenetics (Petersen)

- **Systems: Motor** (Luthi-Carter)
  Exercises: Parkinson\'s and Huntington Disease, ALS (Moore)

- **Neuroprosthetics: Artificial Arms** (Blanke)
  Exercises: Neuroprosthetics (Blanke)

- **Neuroprosthetics: BCI and EEG** (Blanke)
  Exercises: Brain-Computer Interface (Millan)

- **Brain metabolism and Neuroimaging** (Magistretti)
  Exercises: Physics of Brain imaging (Gruetter)

- **MRI in humans** (Hadjikhani)
  Exercises: Diffusion Tensor Imaging (Thiran)

- **Memory** (Sandi)
  Exercises: Memory (Sandi)

- **Alzheimer Disease** (Fraering)
  Exercises: Therapeutic interventions (Fraering)

- **Language and Summary** (Blanke)
  Exercises: Aphasia (Blanke)

Resources
Ressources en bibliothèque