Syllabus

Introduction to EEG methods in Cognitive Science
PhD Research Course
Department of Cognitive Science
Central European University
Winter 2017, 2 credits

Class: Fridays 13:30 to 15:10, Room 103, Október 6. utca 7, and in the labs

Instructors:
Gergely Csibra
Katarina Begus
Dimitrios Kourtis
Barbara Pomiechowska

Description:
This course introduces students to the use of electroencephalography (EEG) for measuring brain function to access cognitive mechanisms in humans. This is a practical course, where students receive hands-on experience in recording and analyzing EEG data, as well as in designing experiments and interpreting findings using this method.

Learning Outcomes
By the end of the course, students should
- be familiar with the nature of the EEG signal and its derivatives,
- be able to design experiments using EEG measures,
- know the basic steps of analyzing EEG data, and
- be able to critically interpret the results of studies published with this technique.

Evaluation:
Grade is awarded on the basis of
- attendance of classes and lab practice,
- completing assignments in data analysis,
- and submitting a research report and an experimental design by the end of the term (submission deadline: April 10, 2017).
Schedule:

January 13
  Assessing cognitive mechanisms via EEG-derived methods

January 20
  The neural basis of the EEG signal and its dependent measures

January 27
  Recording EEG: principles and techniques

February 3
  Recording lab practice (CDC lab & Somby Lab)

February 10
  The initial steps of EEG analysis

February 17
  Event-related potential (ERP) analysis

February 24
  Spectral analysis and time-frequency analysis

March 3
  Quantification and statistical analyses

March 10
  Interpretation and critical evaluation of published studies

March 17
  Experimental design for EEG/ERP studies

March 24
  NO CLASS

March 31
  Combination of neuroimaging methods and Discussion