Higher Cognitive Functions, 7.5 Credits

Course description
The course will present central theoretical and empirical issues related to higher cognitive functions with a specific focus on cognitive control functions. These control functions, often referred to as executive functions, are assumed to mediate goal-directed behavior and involve planning, coordination and updating of complex intentions. Executive control functions are also central to most higher mental activities, including abstract thinking and problem solving, autobiographic memory, self-image, and social interactions. A variety of neuropsychiatric disorders are associated with impairments and deficits in these functions. Another aim of the course is to examine different forms of higher cognitive functions by focusing on the relation among executive functioning, attention, memory and metacognition. The course will deal with individual and developmental differences in executive control functions. The course also aims at elucidating the interplay between emotional and cognitive control and their underlying neural mechanisms.

Course Objectives
After completing the course, students should be better able to analyse and critically reflect on central issues of higher cognitive functions. Students are also expected to gain deeper understanding of: executive functions and their relation to other higher cognitive functions, construct validity and measurement problems within the research area, emotional control and their relation to higher cognitive functions, and developmental trends in executive control function.

Course Requirements:
The course consists of lectures, seminars and exercises. To reach the course objectives, students need to attend and participate in all seminars as follows:

(a) Contribution to seminars. In addition to active participation, students are expected to generate 3-5 questions prior to each seminar. The purpose of these questions is to ensure that you have actually read the papers that have been assigned, and to help raise issues for the discussion. You should submit (upload) your questions to the Athena course web by noon the day before the seminar.

(b) Leading the discussion. At each seminar, 1-2 students have the role of Discussants by organizing and leading the group discussion. Discussants will primarily summarize the key points to be extracted from the seminar articles and chair the session by presenting central issues raised the members of the group. Note that Discussants will lead the seminar, but everyone in the group is responsible for contributing to the seminar. Discussants do not need to submit questions for their seminars.

Examination
The examination is based on each student’s contribution during the seminars, with max 2 points/seminar (2 = good, 1 = pass, and 0 = fail/missed seminar (i.e., 6 seminar x max 2p = 12p). In addition to the seminars, students may earn a higher grade (than the max 12 p) by completing a final examination. This written examination is not mandatory, but participation should be registered before the deadline. The examination will be based on the contents of all seminars, including the supplementary articles (*see below). The maximum score of the written exam is 8 p, and the max score for the whole course is 20 p as summarized below:
Seminars: 6 x 0-2p (= max) = 12
Written exam: max 8
Total: max 20

Final grade:
- A: >18
- B: ≥18
- C: ≥16
- D: ≥14
- E: ≥12
- F: <12

Literature:
Articles (in pdf) and other course materials are available at Athena/HCF/Course literature. *) Supplementary articles included in the written exam.

HCF 1: Perspectives on HCF

HCF 2: Executive functioning

HCF 3: Frontal lobe functions


HCF 4: Emotional control


HCF 5: Developmental perspectives


