Course Syllabus

Cognitive aging

(7.5 credits, spring semester 2018)
“Cognitive aging”

**Course Content:** The aim of the course is to provide an extended understanding of how different cognitive functions change with increasing adult age as well as the neural underpinnings for these changes. The course will focus on normal, successful, and pathological cognitive aging as well as predictors and correlates of different cognitive trajectories in old age. The course will further discuss the methodological challenges associated with longitudinal and life span research.

**Organizers:** The course is arranged by Aging Research Center (ARC: a FORTE center focused on research on aging and health affiliated to Karolinska Institutet and Stockholm University) in collaboration with the Department of Psychology at Stockholm University. All lectures and seminars will take place at the Department of Psychology.

**Language:** English

**Course credits:** 7,5

**Course period:** April 10-May 23 2018

**Course level:** Doctoral level

**Sign up:** Application for graduate course should be sent to course administrator no later than March 23.

**Course Administrator:** Monica Karlsson, monika.karlsson@psychology.se.se, +46 8163845.

**Course Coordinator and Examiner:** Erika Jonsson Laukka, senior researcher at ARC, Erika.Jonsson.Laukka@ki.se, +46 739 072 661 (EJL)

**Other Lecturers**
Lars Bäckman, Professor, ARC
   Lars.Backman.1@ki.se (LB)

Yvonne Brehmer, Senior Researcher, ARC
   Yvonne.Brehmer@ki.se (YB)

Grégoria Kalpouzos, Senior Researcher, ARC
   gregoria.kalpouzos@ki.se (GK)

Jonna Nilsson, Postdoc, ARC
   jonna.nilsson@ki.se (JN)

Goran Papenberg, Senior Researcher, ARC
   goran.papenberg@ki.se (GP)

Jonas Persson, Senior Researcher, ARC
   jonas.persson.1@ki.se (JP)
Course structure

The course will be based on a series of lectures presenting each topic covered during the course. The lectures will be followed by seminars, during which students critically discuss empirical and theoretical articles related to these main themes. Course requirements: (a) Generate and discuss central questions prior to each seminar based on the lecture and course literature, (b) Seminar attendance, and (c) Active participation in the seminars. Supplementary assignments are offered to students who fail to attend maximum two seminars.

Expected learning outcomes

Having finalized the course, students will be able to:

- Describe different methodological approaches in cognitive aging research and critically discuss advantages and disadvantages with these approaches
- Describe normal and pathological cognitive trajectories in aging as well as risk and protective factors for age-related cognitive decline
- Explain the neural underpinnings of cognitive decline and describe the methods by which these can be measured
- Generate examples of interventions that may prevent cognitive decline and dementia
- Reflect on and critically review the concept of cognitive aging and its underlying causes

Examination

For each seminar topic, the students are to generate 3-5 discussion questions based on the seminar and course literature. These questions should also be discussed in written format (1-2 pages) and be sent to the seminar leader the day before the seminar. Seminar attendance is mandatory and active participation is required.

Grade and grade criteria: The grading in the course is on a pass or fail basis:

Pass: For a passing grade, the doctoral student has completed the written individual assignments and showed active participation in the seminars.

Fail: The expected learning outcomes are not met, such that the written assignments have been solved insufficiently, the student has missed more than two seminars, or has not actively participated in the seminar discussions.

Course literature: The course literature consists of empirical papers and review papers related to the lectures and seminars, in total approximately 550 pages.
Cognitive aging PhD course – literature list

Perspectives and methods

Articles:

General


Discussion


Total no of pages: 73

Cognitive decline

Articles:

General


Discussion


Total no of pages: 82

**Maladaptive aging**

**Articles:**

**General**


**Discussion**


Total no of pages: 76

**Neural correlates of cognitive aging**

**Articles:**

**General**

Discussion


Total no of pages: 65

Dopamine and cognitive aging

Articles:

General

- Nyberg L, et al. Dopamine D2 receptor availability is linked to hippocampal-caudate functional connectivity and episodic memory. PNAS; 113: 7918-7923.

Total no of pages: 25

Cognitive and brain plasticity

Articles:

General


Discussion


Total no of pages: 59

Predictors of successful aging

Articles:

General


Discussion


Total no of pages: 71