Course syllabus for

# Cognition, normal and impaired, 7.5 credits

Kognition i hälsa och sjukdom, 7.5 hp
This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

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| Course code | LKG016 |
| Course name | Cognition, normal and impaired |
| Credits | 7.5 credits |
| Form of Education | Higher Education, study regulation 2007 |
| Main field of study | Medicine |
| Level | AV - Second cycle |
| Grading scale | Pass, Fail |
| Department | Department of Clinical Neuroscience |
| Participating institutions | • Department of Neuroscience<br>• Department of Neurobiology, Care Sciences and Society |
| Decided by | Programnämnden för läkarprogrammet |
| Decision date | 2007-05-08 |
| Revised by | Programme committee for study programme in medicine |
| Last revision | 2018-06-26 |
| Course syllabus valid from | Autumn 2007 |

## Specific entry requirements

The student should have completed most of semester 9 in the Study Programme in Medicine or the equivalent course part in another program in KI.

## Objectives

Cognitive science is an interdisciplinary field of research where researchers from fields as different as philosophy, psychology, neuroscience, computer science, linguistics and anthropology study the nature of the human thinking. Central cognitive-scientific issues are, how the human receives and processes information/knowledge, how she interacts with the social and material environment, how she makes decisions and solves problems, and the role emotions play to her mental processes. By studying cognitive processes such as memory, perception, attention, problem-solving, decision making and emotion but also man's consciousness, and (free?) will from an interdisciplinary perspective, knowledge on how to better respond to and support individuals with cognitive failure can be expected, as well as a better understanding of learning in children and adults and adaptation processes. The course aims at

providing deep insights into the mental processes that lead to thoughts, knowledge, memories and judgement. Cognitive function is a key to the individual's autonomy, (WHOs classification of disability). Cognitive failure of various kinds are common and may be responsible for half of society's costs for care (innate and acquired problems, common psychiatric diseases and aging diseases). Patients with cognitive failure often have difficulties in claiming their right in the caring process which makes high demands on understanding in the physician. The course is based on modern neuroscience, but also brings up a number of supplementary perspectives on both cognition in a healthy individuals, and in patients with impaired cognitive ability. The course's overall objective is to help the student understand the principles of modern cognition research, and to be able to see the relevance of new neuro-scientific knowledge in everyday clinical practice.

The learning outcomes are tiered according to the SOLO taxonomy and the skills according to Miller's *:

Skills:
At a basic level be able to identify a number of different types of cognitive physical disability in patients. M3
To be able to carry out and interpret a mini-mental test. M3
To be able to identify and handle emotional and behavioural problems in patients with impaired cognitive ability. M3
To be able to identify and handle aggressiveness related to cognitive failure M3
To be able to identify some typical dysfunctional thoughts of depression and anxiety, and be able to help a patient to question these. M3. To be able to carry out tests for working memory, declarative memory, semantic function, phonological function, complex and simple reaction time, and WAIS-R. M3
To be able to assess risks at brain imaging with PET and HR. M3
To be able to communicate with an individual with cognitive failure. M3
To be able to review the contents of the texts included in curriculum critically. M3
To be able to provide computerised neuropsychological tests M2

Knowledge and understanding:
To be able to describe the principles of different techniques for brain imaging. S2
To be able to describe cognitive disorders related to aging, psychiatric disorders and cognitive physical disability, and relate them to the pathophysiology of the brain. S3
To be able to present knowledge of risk factors for cognitive failure. S2. To be able to present knowledge of the mechanisms of the society as a support in mental retardation, neuropsychiatric diagnoses, dyslexia, acquired cognitive failure and dementia S3
To be able to demonstrate knowledge of evidence-based care in dementia and discuss different treatment options. S4
To present knowledge of the support efforts of the society for individuals with reduced cognitive ability. S2
To be able to present knowledge of social implications of cognitive disorders. S2
To be able to present basics of Cognitive Behaviour therapy (CBT) at a general level and be able to compare these with basics of other psychotherapy. S3. To be able to read and assess scientific literature that is relevant for the subject. S4.

Approach:
To be able to identify ethical conflicts that can arise in the care of patients with reduced autonomy. M3
To assess to the suitability of using cognitive tests M3
To be able to define and discuss the concepts of human dignity, concealed physical disability, availability and community support. M3

# Content

a) skill and proficiency training
The course includes several laboratory parts, but rests to a great extent on theoretical parts including a

few plenary lecture parts. A seminar assignment of one's own with presentations should also be carried out. The student is expected to have a very active approach within the theoretical parts, as the quality in the practical parts rests on applications from these parts.

b) subject integration: Subjects that are integrated in the course:
Palaeontology (the cognitive development of human as a species); linguistics (human languages from the cognitive perspective); genetics (heredity regarding cognitive failure); psychology (particularly cognitive psychology); neuroscience (basic scientific knowledge of the function of the neurons, and the organisation of the brain); psychiatry (the cognitive perspective); sociology (social implications of cognitive disorders; geriatrics (the senile patient).

c) clinical connection:
The course contains clinical seminars, teaching rounds and meetings with local doctors with clinical experience in the area. d) Perspectives of particular concern:
Perspectives of particular concern are the gender perspective, the aging patient, and the patient with cognitive physical disability.

e) research links:
The course has a strong, integrated profile against translational research within basic scientific research functional imaging - clinical applications.

Integrating assignments in the course:
Disorientation/turmoil
Deteriorated intellect
Hallucination/fallacies
Learning/memory problems
Depressivity Anxiety/Fear
Learning disability
Cognition and neuropsychiatric diseases

Tuition forms related to the aims of the course: a) Medical basic science. Relevant basic science consists both of repetition of earlier knowledge in neuroscience and genetics, and of a supplementation of cognitive science and cognitive disorders. The teaching is given both in groups, and in seminars where the student is expected to be well prepared. b) Integration of subjects that can be new to the student: for example palaeontology and linguistics that give a broad perspective on human cognition. c) Clinical skills are trained in role play during clinical seminars and clinical placings. d) Scientific capacity is trained and assessed in literature seminars.

# Teaching methods

The main working methods of the course are
Single initial whole-group parts
Own studies of basic material with associated literature seminars
Study visits
Practical laboratory sessions in imaging
Clinical work with supervision
Practical exercises to use psychological tests under supervision.

# Examination

Examination is arranged a) through participation in literature seminars and clinical parts b) through a presentation of an own advanced assignment with an emphasis on analysis, synthesis and values, and an academic discussion of the advanced assignments of fellow students. c) through written examination with short questions

A pass grade in skills presented above:
Required basic knowledge S1-S2
Professional treatment of a patient with cognitive failure M3

Scientific understanding S4
Ability to integrate basic science and clinic. S3.

Compulsory parts: All time-tabled parts where student participation is included (Introduction, Seminars, presentations, clinical parts and laboratory sessions)

Limitations of the number of examination or placement occasions:
The number of examinations follow KI's guidelines. Supplementation of individual parts takes place in consultation with the examiner. clinical parts can, as a rule, only be repeated once.

# Transitional provisions

The course has been cancelled.

# Literature and other teaching aids

**Cognitive neuroscience : a reader**
*Gazzaniga, Michael S.*

Malden, Mass. : Blackwell, 2000 - xvii, 518 s.
ISBN:0-631-21659-6 (inb.)  LIBRIS-ID:5085998
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