



Course syllabus for

## **Cognitive Processes, 15 credits**

Kognitiva processer, 15 hp

This course syllabus is valid from spring 2020.

Please note that the course syllabus is available in the following versions:

[Spring2013](#) , [Spring2014](#) , [Spring2015](#) , [Spring2016](#) , [Spring2017](#) , [Spring2020](#) , [Spring2022](#) , [Spring2023](#) , [Spring2024](#)

Course code	2PS029
Course name	Cognitive Processes
Credits	15 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Psychology
Level	G2 - First cycle 2
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Clinical Neuroscience
Decided by	Programnämnd 8
Decision date	2012-11-06
Revised by	Education committee CNS
Last revision	2019-10-23
Course syllabus valid from	Spring 2020

### **Specific entry requirements**

Passed results of the first semester (at least 7,5 credits) of the Study Programme in Psychology.

### **Objectives**

#### ***Module 1, Cognitive Processes***

##### *Learning goals*

On completion of the course, the student should be able to

- define the concepts of cognition and cognitive neuroscience and brief describe the historical development of the subject and its current status as scientific subject
- account for central concepts, theories and methods within cognitive psychology (e.g. brain anatomy, brain imaging, cognitive plasticity, memory functions, languages, visuospatial ability, intelligence, executive functions, problem solving and decision making)
- account for the neurobiological basis for the above functions
- discuss individual differences (e.g. sex, age) and conditions (e.g. sleep) in relation to cognitive processes

*Skills and attitudes*

On completion of the course, the student is expected to be able to

- reflect ethically on how to handle test situations and test results with a starting point in his/her initial experience of administrating cognitive tests

**Module 2, Statistical Methods***Learning goals*

On completion of the course, the student should be able to

- independently analyse behavioral data with an emphasis on comparisons between groups by means of analyses of variance methodology

*Skills and attitudes*

On completion of the course, the student is expected to be able to

- review own and others results critically and understand the meaning of statistical significance
- be able to design and carry out a scientific experiment and report this in written text
- be able to carry out and interpret calculations (e.g. correlation, ANOVA) in the statistical program Jamovi
- be able to reflect around research ethics with a starting point in his/her initial experience of collecting and analyzing data

## Content

The course consists of the following two (2) modules:

**Cognitive Processes, 10.5 hp**

Grading scale: VU

Part 1 deals with human cognition and addresses areas within cognitive psychology as method, working memory, episodic memory, semantic memory, implicit memory functions, cognitive plasticity, language functions, intelligence, executive functions, problem-solving and decision making. Also included are sleep, emotion and gender and how these factors interact with cognitive performance. In most cases, aspects of cognition are presented from a theoretical perspective, in which cognitive theories are presented, as well as from a biological perspective, in which the biological basis for the cognitive functions are presented. By means of practical exercises, discussions, and student presentations during seminars, further knowledge and practical understanding of cognitive functions are given.

**Statistical Methods, 4.5 hp**

Grading scale: VU

Part 2 provides a repetition of earlier statistical methods and introduces statistical correlations, analysis of variance, non-parametric tests, power calculation and statistical pitfalls. Practical knowledge is given in computer labs, but also during the laboratory work. In the laboratory work, aspects of cognition is examined in an experiment (multifactorial design), where research ethics, problem formulation, data collection, data analysis (analysis of variance) and interpretation of the data are performed in groups, and the documented and presented in a written scientific report. Finally, the laboratory reports are discussed at a critical review occasion.

## Teaching methods

*Module 1, Cognitive Processes*

The module starts with an introduction to cognitive psychology. Teacher-supervised and webbased lectures are interleaved with seminars, practical exercises and quizzes. Quizzes are compulsory. Attendance and active participation on 80% of the seminars is required.

*Module 2, Statistical Methods*

Teaching of statistical methods starts after the module's introduction and consist of webbased and teacher-supervised lectures and computer exercises. The computer exercises are compulsory and require attendance. On these occasions, quizzes on the textbook content will be given. As a practical exercise, the students collect data in experiments, and later analyse and report the results in a written report. These laboratory sessions are compulsory and require attendance.

## Examination

*Module 1, Cognitive Processes*

The module is examined in a written exam at the end of the course. The contents of the reading list, but also the contents of lectures and seminars are examined in the written examination.

The written exam is given one of the grades Pass with distinction (VG), Pass (G) or Fail (U). For the grade Pass on module 1, Pass on examination is required, but also that the compulsory seminars are completed. In order to get Pass with distinction on module 1, Pass with distinction on the examination is required, but also that the compulsory seminars are completed.

*Module 2, Statistical Methods*

The module is examined in a written examination. The contents of the reading list, but also the contents of lectures and practical exercises are examined in the written examination. The students should also write a laboratory report, in which they present the results of the experimental study they have conducted.

The written examination is given one of the grades Pass with distinction (VG), Pass (G) or Fail (U). On the laboratory report, only one of the grades G/U is given. In order to get Pass on the module, Pass on the examination and Pass on laboratory report is required, but also that the compulsory lectures are completed. In order to get Pass with distinction on module 2, Pass with distinction on the examination and Pass on laboratory report is required, but also that the compulsory lectures are completed.

*Course grade*

The grade Pass (G) on the whole course requires at least Pass (G) on module 1 and at least Pass (G) on module 2, including completion of the compulsory seminars.

The grade Pass with distinction (VG) on the whole course requires Pass with distinction (VG) on module 1 and at least Pass on module 2, including completion of the compulsory seminars.

*Absence from compulsory course elements*

The examiner decides whether, and if so how, absence from compulsory course elements can be made up for. Study results can not be reported until the student has participated in the compulsory parts, or compensated for any absence in accordance with instructions from the examiner. Absence from a compulsory course element could mean that the student can not retake the element until the next time the course is offered.

*Limitation in the number of examinations*

Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. If the student has failed six examinations/tests, no additional examination is given. Each occasion the student participates in the same test counts as an examination. Submission of a blank exam paper is regarded as an examination. In case a student is registered for an examination but does not attend, this is not regarded as an examination.

*Possibility of exception from the course syllabus' regulations on the examination*

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus' regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the

course etc. Content and learning outcomes as well as the level of expected skills, knowledge and attitudes may not be changed, removed or reduced.

## Transitional provisions

The transition rules follow KI's local guidelines.

## Other directives

Course evaluation takes place according to KI's local guidelines. Results and possible measures are returned to the students on course web.

Teaching in English may occur.

## Literature and other teaching aids

### Mandatory literature

The latest editions of the literature should be used.

*Borg, Elisabet; Westerlund, Joakim*

#### **Statistik för beteendevetare. : Faktabok**

3., [uppdaterade och omarb.] uppl. : Malmö : Liber, 2012 - 552 s.

ISBN:978-91-47-09737-1 (korr.) LIBRIS-ID:13434322

[Library search](#)

*Purves, Dale.*

#### **Principles of cognitive neuroscience**

2nd ed. : Sunderland, Mass. : Sinauer Associates, c2013.

ISBN:978-0-87893-573-4 LIBRIS-ID:13905270

[Library search](#)

*Kolb, Bryan; Whishaw, Ian Q.*

#### **Fundamentals of human neuropsychology**

Seventh edition. : New York : Worth Publishers, [2015?] - xxiv, 808, G32, NI10, SI33 pages

ISBN:9781429282956 LIBRIS-ID:18108511

[Library search](#)

*Myers, David G.; Dewall, C Nathan*

#### **Psychology**

Worth Publishers Inc.,u.s., 2018 - 645 sidor

ISBN:9781319113070 LIBRIS-ID:1vv1v3zkjxs54qd3

[Library search](#)

*Reisberg, Daniel*

#### **Cognition : exploring the science of the mind**

7e, international student edition. : New York : W. W. Norton et Company, [2019] - xxiii, 585, A-27, G-20, R-49, C-5, I-26 pages

ISBN:9780393665093 LIBRIS-ID:w656z86gt8l766wh

[Library search](#)

### Suggested literature

*Brace, Nicola; Kemp, Richard; Snelgar, Rosemary.*

**SPSS for psychologists**

5. ed. : Basingstoke : Palgrave Macmillan, 2012. - xi, 470 p.

ISBN:0230362729 LIBRIS-ID:12750273

[Library search](#)

*Navarro,, Danielle J.; Foxcroft, David R.*

**Learning statistics with jamovi: A tutorial for psychology students and other beginners**

University of New South Wales, 2019

URL: [Länk](#)