



**Karolinska
Institutet**

Course syllabus for

Experimental psychology, 15 credits

Experimentell psykologi, 15 hp

This course syllabus is valid from autumn 2014.

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

[Autumn2007](#) , [Autumn2008](#) , [Autumn2009](#) , [Autumn2010](#) , [Autumn2011](#) , [Autumn2012](#) , [Autumn2013](#) ,
[Autumn2014](#) , [Autumn2015](#) , [Autumn2017](#) , [Autumn2020](#) , [Autumn2021](#) , [Autumn2022](#) , [Autumn2023](#) ,
[Autumn2024](#)

Course code	2PS001
Course name	Experimental psychology
Credits	15 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Psychology
Level	G1 - First cycle 1
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Clinical Neuroscience
Decided by	Programnämnden för Psykologprogrammet
Decision date	2007-06-21
Revised by	Programme Committee 8
Last revision	2014-06-24
Course syllabus valid from	Autumn 2014

Specific entry requirements

Ma B, Sh A with at least the Pass grade/3.

Objectives

Part 1

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

- describe the way our senses and our brain interpret the environment in psychologically meaningful units and various theories about this
- describe the principles of how we pay attention to certain types of information, but not other
- give examples of tasks that may be included in the psychologist profession and discuss different aspects of the role of the psychologist

Part 2

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

- describe basic homeostatic emotions such as hunger, thirst and sexuality from psychological, evolutionary and neuroscience perspectives
- describe basic emotions such as fear and anger from psychological, evolutionary and neuroscience perspectives and reflect on the ways in which feelings (or emotions) play a central role in people's lives

Module 3

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

- define and understand the meaning of descriptive statistical concepts (e.g. population, sample, measures of central tendency, variance) and statistical inference (e.g. significance, significance level, within- and between-subject comparisons, t-test), and be able to discuss and implement statistical analysis of simple experimental data
- characterise descriptive methods
- describe the principles of experimental design and analyse the strengths and weaknesses of experimental methodology in different research contexts
- in a group setting plan and carry out a laboratory session in the form of a smaller experiment and in writing be able to analyse, report and discuss its results
- discuss his/her own as project report as well as another student's report of a completed experiment in a seminar

Content

The course contains three modules.

Perception and Attention, 5 hp This module deals with sensory and perception, that is how our minds are informed about the world around us and about events in one's own body, as well as psychological research about how this information is interpreted and used. The neurophysiological background of these functions is treated comprehensively. Perception can not treat all available information but attention processes will select the information to be prioritised that will guide action. Theories (and the neurological basis) of attention are included. Based on a study visit, the psychologist's profession and the relationship between knowledge of the foundations of psychology and its importance for the future professional exercise are discussed. **Emotion and Motivation, 5 hp** This module deals with driving forces and emotional dynamics behind human action. It applies original biologically-based driving forces as hunger, thirst, sexuality and emotional connection to other people and social motives such as for example dominance and neurophysiological control of these. Feelings are treated within the concept emotion, where basic emotion states such as joy, sorrow, fear, anger and disgust are treated from evolutionary biological, psychological and neuro-scientific perspectives. Further, emotional communication is treated, and the interplay between emotion and other psychological processes.

Experimental methodology, 5 hp This module provides an introduction to statistics that partly deals with descriptive statistical concepts such as population and sample distribution, measures of central tendency (e.g. mean), variability (e.g. standard deviation) and statistical estimation, and introduces inference statistics with significance tests of differences between the two groups. Further, an introduction is given to experimental research methodology with an overview of basic concepts such as experimental variables (independent, dependent and irrelevant variables), experimental control, and causal inferences. Further, experimental design and the usability of experimental methodology for various types of issues and scientific writing are discussed.

Teaching methods

The main part of the teaching takes place in the form of lectures/seminars where the students are encouraged to actively participate. A compulsory study visit to a psychologist's workplace is included. Observe that attendance at the preparatory confidentiality lecture is a requirement to be able to participate on the study visit. Further, demonstrations and statistical calculation exercises, and an

implementation of a laboratory work, are included. This laboratory work implies that the students in groups formulate an issue for an experiment and plan, carry out, analyse, and report this in a written report that is then presented at a seminar. Teaching is also given in the format of compulsory seminars. The course coordinator decides whether, and if so how, absence from compulsory course elements can be made up. Final results can not be reported before the student has participated in the compulsory education elements or recovered absence in accordance with the instructions of course coordinator. In case of absence from confidentiality lecture/study visit contact the study visit coordinator.

Examination

The course is examined separately for each module. The grades fail, pass and pass with distinction are applied:

Part 1

- 1) A written examination at the end of module 1. The examinations are graded with fail/pass/pass with distinction
- 2) Active participation in a follow-up seminar after study visit.

To pass the module, pass is required on examinations 1 and 2. To pass with distinction, in addition to this a pass with distinction is required on examination 1.

Part 2

- 1) A written examination at the end of part 2. The examinations are graded with fail/pass/pass with distinction.

Module 3:

- 1) Written examination of method (grades fail/pass/pass with distinction) and statistics (grades fail/pass/pass with distinction), and
- 2) A written report of completed group experiment and oral review of this in a seminar. It is also required that the group acts as a critic of another group's report (grades fail/pass).

To pass the module, pass is required on both parts of the examination (method and statistics) and on the group experiment. To pass with distinction, pass with distinction is required on one of the two parts of the examination.

Grade for the whole module

Observe that in addition to that specified above, participation in compulsory parts is necessary to pass the module. Compulsory parts are given in the timetable.

Course grade

For a pass grade in the whole course, at least a pass in all modules of the course is required. For pass with distinction in whole course, pass with distinction is required in at least two of the three modules of the course.

Limitation in the number of examinations:

A student who has not passed after the regular examination has a right to participate in five further examinations. If the student has carried out six failed examinations/tests, no additional opportunities are given. The times the student has participated in the same test are counted as examination opportunities. Submission of a blank exam is counted as an examination opportunity. An examination to which the student was registered but did not participate is not counted as an examination opportunity.

Transitional provisions

The transition rules follow KI's local guidelines for examination.

Other directives

Course evaluation takes place in accordance with KI's local guidelines. Results and possible actions are

communicated to the students via the course web page.

Literature and other teaching aids

Mandatory literature

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](#)

Myers, David G.

Psychology

10th ed. : New York, NY : Worth Publishers, 2011. - p. cm.

ISBN:1-4292-6178-1 (hardcover : alk. paper) LIBRIS-ID:12746942

[Library search](#)

Fox, Elaine.

Emotion science : cognitive and neuroscientific approaches to understanding human emotions

Basingstoke : Palgrave Macmillan, 2008. - xx, 456 p.

ISBN:9780230005174 (hardback : alk. paper) LIBRIS-ID:14075424

[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](#)

Svartdal, Frode

Psykologins forskningsmetoder : en introduktion

1. uppl. : Stockholm : Liber, 2001 - viii, 295 s.

ISBN:91-47-05056-X LIBRIS-ID:8354383

[Library search](#)

Further study material (e.g., articles) may be included (approx. 200 pages).

In-depth literature

Links to brain and behavior

The senses

http://thebrain.mcgill.ca/flash/i/i_02/i_02_cr/i_02_cr_vis/i_02_cr_vis.html

Motivation: http://thebrain.mcgill.ca/flash/i/i_03/i_03_cr/i_03_cr_que/i_03_cr_que.html

Emotion: http://thebrain.mcgill.ca/flash/i/i_04/i_04_cr/i_04_cr_peu/i_04_cr_peu.html

Brace, Nicola; Kemp, Richard; Snelgar, Rosemary

SPSS for psychologists : a guide to data analysis using SPSS for Windows (versions 12 and 13)

3. ed. : Basingstoke : Palgrave Macmillan, 2006 - xviii, 450 s.

ISBN:1-4039-8787-4 (hft.) LIBRIS-ID:9971180

[Library search](#)

Links about research ethics:

<http://www.notisum.se/rnp/SLS/LAG/20030460.HTM>: Lag (2003:460), swedish law on ethical approval for human research

<http://www.codex.uu.se/index.shtml>: Swedish Research (jointly with the Center for Bioethics) web site for ethical guidelines for research.