GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2018-2019

Modelling of Cognitive Processes (H002000)

Course size (nominal values; actual values may depend on programme)

Credits	5.0	Study time	150 h
Contact hrs	30.0 h		

Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	English	group work	13.75 h
		seminar: practical PC room classes	1.25 h
		self-reliant study activities	5.0 h
		lecture	10.0 h

Lecturers in academic year 2018-2019

Verguts, Tom	PP02	lecturer-in-charge
Senoussi, Mehdi	PP02	co-lecturer

Offered in the following programmes in 2018-2019	crdts	offering
Master of Science in Psychology (main subject Teacher Education and Training)	5	A
Master of Science in Psychology (main subject Theoretical and Experimental Psychology)	5	A
Exchange Programme in Psychology	5	A

Teaching languages

English

Keywords

neural networks, formal models, theories of cognitive processes

Position of the course

Modelling of Cognitive Processes is a deepening course in the master program (Theoretical and Experimental Psychology). The focus is on developing formal models of behavior and cognition in order to derive hypotheses on neural and behavioral data.

Contents

In this course, the following topics are covered:
Formal modeling, neural network models.

Initial competences

Psychologische functieleer II

Final competences

1 Realizing the importance of formal modelling in psychologie.
2 Understanding formal structure of neural networks.
3 Critically evaluating the implementation of cognitive theories in formal models.
4 Extracting the essence of scientific articles in the domain of cognitive modelling.
5 Implementing one’s own ideas about cognitive mechanisms in a neural model.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, lecture, self-reliant study activities, seminar: practical PC room classes

Extra information on the teaching methods

There are both theoretical lessons and computer lessons. In the computer lessons, students are introduced to a computer program that will be used to program models on their own. In this way, they learn both theoretically and practically to work with formal models.

Learning materials and price

- McLeod, P., Plunkett, K., & Rolls, E.T. (1998). Introduction to connectionist modelling of cognitive processes. Oxford University Press: Oxford.
- Slides.

Cost: 50 EUR

References

Rolls, E.T., & Treves, A. (2004). Neural networks and brain function. Oxford University Press: Oxford.

Course content-related study coaching

Interactive support and support via Minerva.

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Open book examination, oral examination

Examination methods in case of periodic evaluation during the second examination period

Open book examination, oral examination

Examination methods in case of permanent evaluation

Participation, assignment, skills test

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Evaluation of the computer tests throughout the year. Final exam consisting of both theory and a computer test.
Feedback about the non-period evaluation: The student can receive oral feedback about each computer test.

Calculation of the examination mark

A combination of periodic (50%) and permanent (50%) evaluation.

In order to pass the course students have to obtain a final score of at least 10/20 and have to obtain at least the equivalent of 8/20 on all parts of the evaluation. In that case, final scores of 10/20 and above will be reduced to the highest fail quotation (9/20).

Students will not be deliberated if they obtain an equivalent of 8/20 on at least one part of the evaluation. In that case final scores of 8/20 and above will be reduced to the highest non-deliberative quotation (7/20).