

# Subject-Specific Study and Examination Regulations for the Consecutive Master's Program in *Cognitive Science* at the University of Potsdam

Dated January 31, 2024

The Faculty Council of the Faculty of Human Sciences at the University of Potsdam has approved on January 31, 2024, the following study and examination regulations on the basis of Section 19 subsection 1, Section 22 subsections 1-3 in conjunction with Section 72 subsection 2 no. 1 of the Brandenburg Higher Education Act (BbgHG) of April 28, 2014 (Law and Ordinance Gazette [GVBl.] I/14, [no. 18]), last amended by the Act of September 23, 2020 (GVBl. I/20, [no. 26]) in conjunction with the Ordinance on the Design of Examination Regulations to Guarantee the Equivalency of Studies, Examinations, and Degrees (University Examination Ordinance - HSPV) of March 4, 2015 (GVBl. II/15, [no. 12]), amended by the ordinance of July 7, 2020 (GVBl. II/20, [no. 58]), and the Ordinance on the Accreditation of Studies (StudAkkV) of October 28, 2019 (GVBl. II/19, [no. 90]) and with Section 21 subsection 2 no. 1 of the Basic Constitution of the University of Potsdam (GrundO) of December 17, 2009 (Bulletin UP no. 4/2010, p. 60) in the Seventh Amended Version of the Basic Constitution of the University of Potsdam (GrundO) of December 14, 2022 (Bulletin UP no. 8/2023, p. 318) and Section 1 subsection 2 of the new version of the General Study and Examination Regulations for Bachelor and Master's Degree Programs at the University of Potsdam Not Related to Teacher Education (BAMA-O) of January 30, 2013 (Bulletin UP no. 3/2013, p. 35), last amended on October 18, 2023 (Bulletin UP no. 16/2023, p. 670):<sup>1</sup>

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## Section 1 Applicability

(1) These regulations apply to the consecutive master's degree program in *Cognitive Science* at the University of Potsdam.

(2) In the event that these regulations contradict the BAMA-O with regard to the master's program, then the provisions in the BAMA-O supersede these regulations.

## Section 2 Degree

The Faculty of Human Sciences at the University of Potsdam awards the degree of "Master of Science" ("M.Sc.") to students who have obtained the necessary credit points in the master's program and meet the graduation requirements.

## Section 3 Contents and Objectives of the Master's Degree Program

(1) The master's program in *Cognitive Science* takes the knowledge, skills, and methodologies acquired in the bachelor's program and expands them in an interdisciplinary direction in the field of cognitive science. The program qualifies graduates for scientific work as well as industrial research and management activities in the field of cognitive analysis and modeling of human behavior in the research and private sector (e.g. user experience in companies, digital education, consulting for organizations). Graduates possess the necessary knowledge of cognitive processes and their biological foundations required to generate hypotheses about human behavior, to perform quantitative measurements to test hypotheses through experiments, and to develop cognitive modeling in the interdisciplinary sub-fields of cognitive sciences and their applications. Students have professional and social skills for civic participation. For new application or research-oriented tasks, they can define goals while reflecting on the possible social, economic, and cultural effects, use suitable means, and independently acquire knowledge for this purpose. They are able to conduct discipline-specific and interdisciplinary discussions.

This qualifies them for independent scientific work at universities or science centers and for further academic qualification (doctorate).

<sup>1</sup> Approved by the President of the University of Potsdam on February 26, 2024.

(2) Graduates have both the subject-specific and interdisciplinary methodological skills required to describe scientific problems in cognitive process analysis. They can formulate new approaches to problems in this field, perform experimental investigations and modeling, and they can apply and further develop methods used to answer these research questions. Graduates can critically analyze and evaluate existing experimental approaches and mathematical models. They are able to organize collaboration between teams working in experimental and theoretical ways, to define intermediate objectives, to guide the preparation of research results, and to present these results in English.

**Section 4 Duration and Organization of the Master’s Degree Program**

(1) The research-focused, *consecutive* master’s program in *Cognitive Science* is offered at the University of Potsdam with a standard period of study (full-time program) of 4 semesters and 120 credit points.

**Section 5 Part-Time Study**

The master’s program is suitable for part-time study. Part-time study requires advising from the relevant faculty so that an individualized course schedule can be created. Proof of this advising must be attached to an application for part-time study in accordance with Section 3 of the Regulations for Part-Time Study at the University of Potsdam (Part-Time Regulations). In all other respects, the provisions of the Part-Time Regulations shall apply.

**Section 6 Program Structure, Bridge Modules**

(1) If a bridge module is assigned by decision of the Examining Board at the time of admission, the degree program consists of the following components:

I. Compulsory modules	54 CPs
II. Elective modules	30 CPs
III. Bridge module	6 CPs
Master's thesis	30 CPs

(2) If no bridge module is assigned by decision of the Examining Board at the time of admission, the degree program consists of the following components:

IV. Compulsory modules	54 CPs
V. Elective modules	36 CPs
Master's thesis	30 CPs

**Section 7 Module Structure and Credit Points**

The master’s degree program in *Cognitive Science* consists of the following components:

<b>Master’s Degree Program</b>		
<b>Module Ab- breviation</b>	<b>Name of Module</b>	<b>CPs</b>
<b>I. Compulsory Modules (Total of 54 CPs)</b>		
CSE-MA-005	Cognitive Science	15
CSE-MA-006	Mathematical Modeling in Cognitive Science	6
CSE-MA-007	Cognitive Neuroscience	9
CSE-MA-017	Individual Research Module	12
IECL-MA-02	Introduction to Statistical Data Analysis	12
<b>II. Elective Modules (Total of 30 - 36 CPs)</b>		
In the elective area, modules with the following scope must be completed:		
a) 36 CPs for students who do not have to take a bridge module (3 x 12 CPs or 2 x 12 CPs + 2 x 6 CPs or 1 x 12 CPs + 4 x 6 CPs or 6 x 6 CPs or 2 x 9 CPs + 3 x 6 CPs or 2 x 9 CPs + 1 x 6 CPs + 12 CPs)		
b) 30 CPs for students who have to take a bridge module (2 x 12 CPs + 1 x 6 CPs, 1 x 12 CPs + 3 x 6 CPs, 5 x 6 CPs or 2 x 9 CPs + 2 x 6 CPs or 2 x 9 CPs + 12 CPs)		
CSE-MA-027	Bayesian Statistics	12
CSE-MA-008	Advanced Methods: Experiment Programming	6
IECL-MA-10	First Language Acquisition	6
IECL-MA-11	Language Processing	6
IECL-MA-12	Evidence Bases for Language Disorders	6
IECL-MA-20	Advanced Topics in First Language Acquisition	12
IECL-MA-21	Advanced Topics in Language Processing	12
IECL-MA-22	Advanced topics in Evidence Bases for Language Disorders	12
CSE-MA-009	Cognitive Development	6
CSE-MA-016	Topics in Cognitive Neuroscience	6
CSE-MA-023	Current Topics in Cognition	6
CSE-MA-024*	Advanced Topics in Cognition	9
CSE-MA-025	Cognitive Modeling	6
BM1*	Advanced Natural Language Processing	9
<b>III. Bridge Modules (6 CPs)</b>		
Whether and which bridge module must be completed is determined by the Examining Board upon		

admission in accordance with the provisions of the subject-specific study and examination regulations. The bridge module reduces the credit points to be acquired in the elective area by 6 CPs (see Section 6 subsection 2).		
CSE-MA-004	Experimental Psychological Training	6
FM1	Foundations of Mathematics	6
CSE-MA-026	Programming of Experiments	6
Master's Thesis (30 CPs)		30
<b>Total of the compulsory and elective modules to be completed</b>		<b>120</b>

(2) These regulations apply to all students who enroll in the in the master's degree program *Cognitive Science* at the University of Potsdam after these regulations have taken effect.

\* Module CSE-MA-024 can only be combined with module BM1 in order to achieve the required number of credit points.

(2) The language of instruction in the *Cognitive Science* program is English.

(3) Details on the module descriptions of the modules mentioned in subsection 1 are defined in Appendix 1 and 2 of these regulations.

(4) A sample degree progress plan for the master's program can be found in Appendix 3 of these regulations.

## Section 8 Non-Binding Examinations

One non-binding examination can be claimed in the master's degree program Cognitive Science. In all other respects, Section 13 BAMA-O shall apply.

## Section 9 Stay Abroad

A stay abroad during the degree program is possible; a suitable point in time for a semester abroad is, for example, the writing of the master's thesis during the fourth semester.

## Section 10 Master's Thesis

(1) Students who have completed a minimum of 72 CPs are entitled to the immediate allocation of a topic for the master's thesis.

(2) The master's thesis has a scope of 30 credit points.

## Section 11 Entry into Force, Expiration, Transitional Provisions

(1) These regulations take effect on the day after their publication in the Official Announcements of the University of Potsdam.

## Appendix 1: Module Catalog for the Master's Program

The descriptions of the program's modules listed in Section 7 and the tables below are governed by the regulations for the module catalog of the Faculty of Human Sciences for the bachelor's and master's programs at the University of Potsdam (MK HWF). Supplementary regulations and/or deviations from the MK HWF are indicated in the tables that follow.

Module code	Module title	CM/ EM	CPs	Participation requirements
CSE-MA-005	Cognitive Science	CM	15	see MK HWF
CSE-MA-006	Mathematical Modeling in Cognitive Science	CM	6	see MK HWF
CSE-MA-007	Cognitive Neuroscience	CM	9	see MK HWF
CSE-MA-017	Individual Research Module	CM	12	see MK HWF
IECL-MA-02	Introduction to statistical analysis	CM	12	see MK HWF
CSE-MA-027	Bayesian Statistics	EM	12	see MK HWF
CSE-MA-008	Advanced Methods: Experiment Programming	EM	6	see MK HWF
IECL-MA-010	First Language Acquisition	EM	6	see MK HWF
IECL-MA-11	Language Processing	EM	6	see MK HWF
IECL-MA-20	Advanced Topics in First Language Acquisition	EM	12	see MK HWF
IECL-MA-21	Advanced Topics in Language Processing	EM	12	see MK HWF
IECL-MA-12	Evidence Bases for Language Disorders	EM	6	see MK HWF
IECL-MA-22	Advanced Topics in Evidence Bases for Language Disorders	EM	12	see MK HWF
CSE-MA-009	Cognitive Development	EM	6	see MK HWF
CSE-MA-016	Topics in Cognitive Neuroscience	EM	6	see MK HWF
CSE-MA-023	Current Topics in Cognition	EM	6	see MK HWF
CSE-MA-024	Advanced Topics in Cognition	EM	9	see MK HWF
CSE-MA-025	Cognitive Modelling	EM	6	see MK HWF
CSE-MA-004	Experimental Psychological Training	CM*	6	see MK HWF
CSE-MA-026	Programming of Experiments	CM*	6	see MK HWF
CPs = Credit Points, CM = Compulsory Module, EM = Elective Module				

\* In case of the assignment of bridge modules upon admission to the program.

**Appendix 2: Subject-Specific Module Descriptions**

<b>BM1: Advanced Natural Language Processing</b>		Number of credit points (CPs): 9		
Module type (compulsory or elective module):	Elective module			
Content and objectives of the module:	<p><i>Qualification objectives</i></p> <ul style="list-style-type: none"> <li>- Students will gain broad, well-established knowledge of the methods and applications of computer linguistics. On this basis, they can understand and critically assess the latest literature in computer linguistics. They can work with literature independently.</li> <li>- The students can select and implement appropriate methods for specific problems in computer linguistics.</li> <li>- Students can implement computer linguistics algorithms in an appropriate programming language. They know the common available grammars and data sets and are able to utilize and, if necessary, process them for the given problem.</li> </ul> <p><i>Content</i></p> <p>This course deals with the most important applications in computer linguistics, as well as the modeling approaches and associated algorithms used in these applications. The course focuses on symbolic and statistical methods for parsing, generation, part-of-speech tagging, semantic processing, discourse processing, and machine translation. The lecture is supplemented by recitation courses as well as intensive independent study (textbook, research literature).</p>			
Module (sub-)examinations (number, form, scope):	Written exam, 120 minutes Final project, project report approx. 10 pages			
Independent study time (in hours (h)):	210			
Courses (teaching formats)	Contact time (in hrs/wk per semester)	Secondary examinations (number, form, scope)		Course-accompanying module (sub-) examination(s) (number, form, scope)
		For completing the module	For admission to the module examination	
Lecture (Lecture)	2	-	-	-
Recitation course (Recitation course)	2	-	successful completion of the weekly assignments	-
Frequency at which the module is offered:		Winter semester		
Prerequisite for taking the module:		none		
Teaching unit(s):		Linguistics		

<b>FM1 Foundations of Mathematics</b>		Number of credit points (CPs): 6		
Module type (compulsory or elective module):	Elective module			
Content and objectives of the module:	<p><i>Qualification objectives</i> Students have the required background knowledge of mathematics to successfully complete the basic modules of this degree program. They can organize their own work in order to acquire this knowledge independently, and can orally present content and contexts.</p> <p><i>Content</i> Analysis: limits, functions, differential calculus, calculating maximums and minimums, integral calculus, integration of rational functions, indefinite integrals, functions with multiple variables, partial differentials, multidimensional integrals Linear Algebra: linear systems of equations, Gauss algorithm, determinants, matrix and vector calculus, scalar and vector product, lines and planes, differentiation of vector functions</p> <p>The content is taught via suitable online video lectures, e.g. by Coursera or MIT OpenCourseWare.</p>			
Module (sub-)examination (number, form, scope):	Oral exam, 20 min			
Independent study time (in hours (h)):	150			
Courses (teaching formats)	Contact time (in hrs/wk per semester)	Secondary examinations (number, form, scope)		Course-accompanying module (sub-) examination(s) (number, form, scope)
		For completing the module	For admission to the module examination	
Video lecture (Lecture)	-	-	-	-
Recitation course (Recitation course)	2	-	successful completion of the assignments	-
Frequency at which the module is offered:	Winter semester			
Prerequisite for taking the module:	Decision by the Examining Board regarding admission to studies.			
Teaching unit(s):	Linguistics			

### Appendix 3: Sample Degree Progress Plan

Master's studies	4 <sup>th</sup> semester (30 CPs)	<b>Master's thesis (30 CPs)</b>			
	3 <sup>rd</sup> semester (30 CPs)	<b>CSE-MA-017 (12 CPs)</b>	<b>Elective modules (18 CPs)</b>		
	2 <sup>nd</sup> semester (27 CPs)	<b>IECL-MA-02 (6 CPs)</b>	<b>CSE-MA-007 (9 CPs)</b>	<b>CSE-MA-006 (6 CPs)</b>	<b>Elective module (6 CPs) or Bridge module (6 CPs)</b>
	1 <sup>st</sup> semester (33 CPs)	<b>IECL-MA-02 (6 CPs)</b>	<b>CSE-MA-005 (15 CPs)</b>	<b>Elective modules (12 CPs) or Bridge module (6 CPs) and Elective module (6 CPs)</b>	