Assessment plan for the curriculum of the Master's degree programme in Computational Cognitive Science, 2026-2027

Programme director: Prof. dr. J.P. Borst

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1. Vision on assessment

1. to stimulate students to develop strong academic skills in addition to mastery of content, assessment will include the diversity of skills relevant to a professional in computational cognitive science, which each have a substantial contribution to the final grade
2. to prepare students for their future careers, authentic assessment, geared towards future work, will be implemented where possible
3. to stimulate students' ability for critical reflection, assessment will include components for self and peer evaluation
4. to design teaching and assessment according to a learning pathway, course coordinators will jointly implement assessment strategies for subsequent courses within a learning pathway

2. Assessment guidelines

1. all courses need a minimum of two assessment activities
2. final tests or assessments that contribute substantially to the final grade are reviewed by a second examiner
3. formative assessments are activities for which students receive feedback and which they can use to reflect on how they are performing. Formative assessment may contribute in a limited way to the final grade of a course, with a maximum of 20%.
4. how students can use supporting materials and supporting (AI) tools is explicitly stated for all graded assignments
5. courses that have graded elements that are affected by the use of Generative AI models should incorporate the adoption of these models in the design of these elements
6. in all courses where the use of supporting materials or supporting tools is prohibited, a supervised assessment item is included
7. for group work, part of the grade can be dedicated to criteria related to collaboration and organization within groups
8. for all self and peer assessment a valid grading rubric needs to be provided to students

3. Learning outcomes of the degree programme

Learning Outcome *At the end of the programme, the master graduate …*	
1	demonstrates knowledge, understanding and the ability to evaluate, analyse and interpret relevant data, all on a level that builds on and surpasses the level of the bachelor Artificial Intelligence, in at least three of the research areas below. In one research area of Computational Cognitive Science the master has specialised knowledge at an advanced level. a. Computational theories and models of cognitive processes b. Multivariate statistics c. Cognitive ergonomics d. Application of formal models of cognition in human-computer interaction and education e. Linguistics and language technology f. Cognitive neuroscience
2	demonstrates knowledge and understanding, on a level that builds on and surpasses the level of the bachelor Artificial Intelligence, in the empirical sciences (Psychology, Biology and Physics) and has experience applying and analysing results thereof.
3	(except for the master graduate in track Science, Business and Policy) demonstrates relevant knowledge and the ability to apply methods and techniques from mathematics and logic used in Computational Cognitive Science.
4	demonstrates relevant knowledge and the ability to use programming languages used in the field of Computational Cognitive Science.
5	has the ability to, on an international academic level, analyse problems, critically and constructively review both one's own and other scientific results, even if incomplete, and to communicate about this both individually and in a group, both orally and in written form, also in a broader societal context, to both specialists and nonspecialists.
6	has the ability to critically reflect on their own working method and knowledge and to recognize the need for continued learning with a high degree of autonomy, and is able to understand the scientific developments within the field of Computational Cognitive Science.
Additionally, the master graduate in Computational Cognitive Science in the track Science, Business and Policy …	
7	has an understanding of the way in which businesses and policy organizations are functioning (governments and non-governmental organizations, NGO's).
8	understands the connections between natural science research, business, and policy.
9	is able to integrate aspects of natural science, business and management.
10	has developed their social and communicative skills, is able to work project-based, and is capable of taking professional responsibility.

4. Overview of assessment methods, test moments for course units, and examiners

The abbreviations for the relevant assessment methods used in below table are the following:

- *Written Exam (WE)*
- *Multiple Choice (MC)*
- *Oral Exam (OR)*
- *Report (R)*
- *Presentation (P)*
- *Practical Work (PR)*
- *Assignment (AST)*
- *Peer Review (PE)*

Year	**Period**	**Course**	**Course code**	**EC**	**Assessment methods**	**Does (part of the) assessment have a formative function?**	**Test moment(s)** (e.g. mid-term (MT), end-term (ET), continuous assessment (CA), etc)	**First examiner**	**Second examiner**
Mandatory Course Units									
1	1a-1b	Advanced Statistical Modelling	WMCC005-05	5	WE, AST, PE	Yes	CA, MT, ET	J.C. van Rij-Tange	J.P. Borst
1	1a	Human-Centred Artificial Intelligence	WMCC023-05	5	AST	Yes	CA, ET	F. Cnossen	J.J. Schoeffer
1	1a	Modelling of Human Language	WMCC018-05	5	AST, P	Yes	CA, ET	J.C. van Rij-Tange	S.M. Jones
1	1a-1b	Methods in CCS	WMCC015-05	5	P, R	Yes	CA, ET	J.P Borst	L. Vortmann
1	1b	Cognitive Modelling	WMCC019-05	5	AST, R	Yes	CA, ET	N.A. Taatgen	J.P. Borst
1	1b	Machine Learning for Computational Cognitive Science	WMCC017-05	5	P, AST	No	CA	A.I. Sburlea	L. Vortmann
2	1a-2b	Final Research Project CCS [1]	WMCC901-45	45	R, P	Yes	NA	Project Supervisor**	Project Supervisor**
2	1a	Introduction Science and Business [2]	WMSE001-10	10	*	*	*	*	*
2	1a-1b	Introduction Science and Policy [2]	WMSE002-10	10	*	*	*	*	*
2	1b-2b	Work Placement Business and Policy [2]	WMSE902-40	40	*	*	*	*	*
2	2a-2b	Research Project CCS for SBP [2]	WMCC029-15	15	R, P	Yes	ET	Project Supervisor**	Project Supervisor**
Course Units in Specialisation(s) and Electives									
1	1a-2b	First Year Project	WMCC027-15	15	R, P	No	ET	Project Supervisor**	Project Supervisor**

Year	Period	Course	Course code	EC	Assessment methods	Does (part of the) assessment have a formative function?	Test moment(s) (e.g. mid-term (MT), end-term (ET), continuous assessment (CA), etc)	First examiner	Second examiner
2	1a	Realtime Non-Invasive Brain-Computer Interfaces	WMCC030-05	5	AST, R	No	CA, ET	A.I. Sburlea	I.P. de Jong
2	1a	User Modelling	WMCC021-05	5	AST, R, P	Yes	CA, ET	C.L. Sibert	J.P. Borst
1, 2	2a	Advanced Analysis of Brain and Behavior	WMCC026-05	5	R, AST, P	No	CA, ET	L.M. Vortmann	A.I. Sburlea
1, 2	2a	AI in Education	WMCC028-05	5	R, AST, P	No	ET	N.A. Taatgen	J.P. Borst
1, 2	2a	Cognitive Engineering	WMCC001-05	5	R, P, AST	Yes	CA	F. Cnossen	C.L. Sibert
1, 2	2a	Computational Simulations of Language	WMCC009-05	5	OR, AST, PR	Yes	CA	S.M. Jones	J.C. van Rij-Tange
1, 2	2a	Non-Invasive Brain Computer Interfaces	WMCC016-05	5	WE, AST, P	No	CA, ET	A.I. Sburlea	I.P. de Jong
1, 2	2b	Cognitive Neural Networks	WMCC022-05	5	WE/MC, AST	Yes	CA, ET	M.M. Cook	J.P. Borst
1, 2	2b	Computational Cognitive Neuroscience	WMCC010-05	5	R, AST, P	Yes	CA, ET	M.K. van Vugt	N.A. Taatgen
1, 2	2b	Models of Human-Syntax Processing	WMCC014-05	5	AST, R	Yes	CA, ET	S.M. Jones	J.C. van Rij-Tange
1, 2	2b	User-Centred Design	WMCC025-05	5	R, P, PR	Yes	ET	M.B. Schippers	F. Cnossen

1 Not applicable for students in SBP track

2 Only applicable for students in SBP track

* Course Unit organized by Other Degree Programme. For more information see the Assessment Plan of the Degree Programme organizing the course unit.

** The following examiners are allowed to supervise First Year Projects and Final Research Projects in the Computational Cognitive Science Master's Programme:

- prof. dr. J.P. Borst
- prof. dr. R. Carloni
- dr. Z.L. Christoff
- dr. F. Cnossen
- prof. dr. M.M. Cook
- dr. M.A. Dhali
- prof. dr. J. Dibangoye
- prof. dr. D. Grossi
- prof. dr. H. Jaeger
- dr. S.M. Jones
- I.P. de Jong, MSc
- dr. Q. Li
- dr. S.H. Mohades Kasaei
- dr. J.C. van Rij – Tange
- dr. M. Sabatelli
- dr. A.I. Sburlea
- dr. M.B. Schippers
- dr. J.J. Schoeffer

- dr. C.L. Sibert
- prof. dr. N.A. Taatgen
- dr. T.M. Tashu
- J.D. Top, MSc.
- dr. M.A. Valdenegro Toro
- dr. G.M. van de Ven
- prof. dr. L.C. Verbrugge
- prof. dr. H.B. Verheij
- dr. P.A. Vogt
- dr. L.M. Vortmann
- dr. M.K. van Vugt
- dr. H.A. de Weerd
- dr. Y. Ziser

5. Relationship between course units and details of the learning outcomes

Please note in the table below the course units per block in the programme. Indicate which learning outcomes are assessed in which courses by adding an X in the relevant cell. ***An X means that the learning outcome is explicitly assessed (not merely addressed) in the course.***

			Learning outcomes of the degree programme *(7-10 only applicable for SBP track)*									
			1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Period	**Course**	**Course code**	**Year 1 - compulsory courses**									
1a-1b	Advanced Statistical Modelling	WMCC005-05	b		X		X					
1a	Human-Centred Artificial Intelligence	WMCC023-05	c, d	X			X	X				
1a	Modelling of Human Language	WMCC018-05	a					X				
1a-1b	Methods in CCS	WMCC015-05	f	X		X	X	X				
1b	Cognitive Modelling	WMCC019-05	a	X		X	X	X				
1b	Machine Learning for Computational Cognitive Science	WMCC017-05	g		X			X				
Period	**Course**	**Course code**	**Year 2 - compulsory courses**									
1a-2b	Final Research Project CCS [1, 3]	WMCC901-45		X	X	X	X	X				
1a	Introduction Science and Business [2]	WMSE001-10					X	X	X	X		X
1a-1b	Introduction Science and Policy [2]	WMSE002-10					X	X	X	X		X
1b-2b	Work Placement Business and Policy [2, 3]	WMSE902-40					X	X			X	X
2a-2b	Research Project CCS for SBP [2, 3]	WMCC029-15					X	X			X	X
Period	**Course**	**Course code**	**Course Units in Specialisation(s) and Electives**									
1a-2b	First Year Project	WMCC027-15		X	X	X	X	X				
1a	Realtime Non-Invasive Brain-Computer Interfaces	WMCC030-05	b-d			X	X	X				
1a	User Modelling	WMCC021-05	a, d	X		X	X	X				
2a	Advanced Analysis of Brain and Behavior	WMCC026-05	a, b, f	X		X	X	X				
2a	AI in Education	WMCC028-05	a, d	X		X	X	X				
2a	Cognitive Engineering	WMCC001-05	c, d	X			X	X				
2a	Computational Simulations of Language	WMCC009-05	e									
2a	Non-Invasive Brain Computer Interfaces	WMCC016-05	g		X							
2b	Cognitive Neural Networks	WMCC022-05	a, f	X		X						

			Learning outcomes of the degree programme (7-10 only applicable for SBP track)									
			1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
2b	Computational Cognitive Neuroscience	WMCC010-05	a, f	X			X	X				
2b	Models of Human-Syntax Processing	WMCC014-05	e									
2b	User-Centred Design	WMCC025-05	c	X			X	X				

[1] Not applicable for students in SBP track

[2] Only applicable for students in SBP track

[3] The learning outcomes in projects can differ depending on the type of project.