

Assessment plan for the curriculum of the Research Master Behavioural and Cognitive Neurosciences 2022/2023

Introduction

This assessment plan is a systematic description of the testing and assessment modes for all study components in the curriculum of the Research Master Behavioural and Cognitive Neurosciences 2022/23. The plan is based on the assessment policy of the Faculty of Mathematics and Natural Sciences, as set out in the 2013-2014 version of the FMNS Quality Assurance Manual (Chapter 6: Assessment) and the protocol setting out the duties and powers of the Faculty's Board of Examiners (December 2013).

The assessment plan for the curriculum consists of the following parts:

1. objective(s) of the degree programme
2. the learning outcomes of the degree programme
3. descriptions of the study components, as set out in the appendices to the Teaching and Examination Regulations 2022/23 of the degree programme
4. descriptions of the content of each study component in Ocasys, the online course catalogue.

The following elements are relevant in this context:

- objectives
 - description of content
 - lecturers
 - assessment mode(s) and calculation of final mark
 - mode(s) of instruction.
5. An overview of the examiners and a detailed assessment mode for each study component. This overview is based on the curriculum approved by the Programme Committee, as set out in the appendices to the Teaching and Examination Regulations 2022/23 for the degree programme.
 6. A matrix showing the relationship between the study components and the detailed learning outcomes for each competence area.

Parts 3 and 4 are not included in this document. For the descriptions of the study components, see the Appendix to the Teaching and Examination Regulations 2022/23 of the Research Master Behavioural and Cognitive Neurosciences. Descriptions of the content of each study component can be found in Ocasys, the online course catalogue (<http://www.rug.nl/ocasys/>).

1. Objectives of the degree programme

The program aims to provide a thorough specialist training in the theoretical basis and state of the art methods in the field of Behavioural, Cognitive and Molecular Neurosciences, producing graduates with a broad view of the interdisciplinary research area, the neurosciences. The program prepares its graduates to embark on a solid scientific career in the neurosciences starting with preparing them for entering a PhD program. The three subfields of specialisation (Animal and Human Behavioural Neuroscience, Cognitive Neuroscience and Cognitive Modelling, and Clinical and Molecular Neurosciences) have been chosen on the basis of the research strengths available at the RUG and the view that research in neurosciences will profit from a strong collaboration of these three disciplines. Students will therefore receive extra research training in one of these fields, culminating in a major M.Sc. thesis in the chosen field. The setting provides outstanding opportunities for interdisciplinary studies, and students will be exposed to the other areas by regular joint events. In this way the students will learn to appreciate the relevance, understand and question the approaches and theoretical foundations of these interrelated fields, be able to understand the approaches in the other subfields, and thereby become truly interdisciplinary in their research attitude.

2. Learning outcomes of the degree programme

Learning outcomes of the BCN research master programme	Dublin descriptors
<i>Students have acquired</i> 1. specialized knowledge in one of the three subfields of behavioural, cognitive or medical neurosciences and can use this knowledge to explain in details the relevant concepts, using the appropriate terminology for their field. 2. a broad overview of contemporary issues in the area of behaviour, cognition, and neurosciences. 3. apply appropriate experimental designs and statistical models. 4. a long-lasting network of (future) colleagues valuable for their career. 5. an understanding of the requirements for a successful international scientific career and the ability to judge whether he/she fulfils these requirements.	Knowledge and Understanding Students have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with Bachelor's level, and provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context.
<i>Students have demonstrated</i> 6. the ability to select and apply modern neuroscience techniques and research approaches. 7. understanding of the need for multidisciplinary/interdisciplinary approaches to investigate the working of the brain and can work in a multidisciplinary/interdisciplinary environment. 8. the ability to design and conduct scientific research, taking into account the limitations of available information and scientific problems in behaviour, cognition and neuroscience. 9. understanding of how to act according to the guidelines of scientific integrity 10. the ability to reflect on the social and ethical responsibilities linked to the application of his/her knowledge and judgement. 11. understanding of how to apply for research grants and fund their career in research.	Applying knowledge and understanding Students can apply their knowledge and understanding, and problem-solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
<i>Students have demonstrated the ability</i> 12. evaluate scientific results, views and concepts with a positive critical attitude 13. independently investigate and critically evaluate scientific literature. 14. have a general work orientation that is required for participation in an international research team, contributing to collective goals, effective time management, and participation in a research network.	Applying knowledge and understanding Students can apply their knowledge and judgements.
<i>Students have demonstrated the ability to</i> 15. present scientific research in written and verbal form, taking into account the limitations of their conclusions.	Communication Students can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously.
<i>Students have demonstrated</i>	Learning skills

16. independently acquire new knowledge and skills that are relevant for his/her professional career. 17. obtain an overview of the core issues in a scientific area in a short period of time.	Students have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.
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3. Overview of examiners and assessment modes for study components

Course unit	ECT S	Practical	Examiner(s)	Second examiner	Assessment modes
General course elements					
Introduction to BCN	4	No	M. Nieuwenstein	J.C. Billeter	<i>R</i>
Career Related Topics	3	No	M.H. Kas;	t.b.d.	<i>AST</i>
Colloquium	3	No	J.C. Billeter;	project supervisors	<i>P</i>
Essay/PhD Research Proposal	4	No	Staff affiliated to BCN rema (see appendix 1)	Staff affiliated to BCN rema (see appendix 1)	<i>R</i>
Minor Project	29	Yes	Staff affiliated to BCN rema (see appendix 1)	Staff affiliated to BCN rema (see appendix 1)	<i>PR, P, R</i>
Major Project	40	Yes	Staff affiliated to BCN rema (see appendix 1)	Staff affiliated to BCN rema (see appendix 1)	<i>PR, P, R</i>
Summer Symposium I	1	No	J.C. Billeter	Staff affiliated to BCN rema (see appendix 1)	<i>P</i>
Summer Symposium II	1	No	J.C. Billeter	Staff affiliated to BCN rema (see appendix 1)	<i>P</i>
B track					
Timing of Behaviour	5	Yes	P. Meerlo;	R.A. Hut	<i>IE, P</i>
Function and Evolution of Behaviour	4	No	t.b.d.	S. Verhulst	<i>AST, P, R</i>
The Neuro-endocrine Basis of Behaviour	5	Yes	A.J.W. Scheurink;	J.D.A. Olivier	<i>AST, PR, P, R</i>
<i>The Neurobiology Basis of Behaviour</i>	5	Yes	<i>S. Moorman;</i>	t.b.d.	<i>t.b.d.</i>
C track					
Models of Cognition	5	No	M.R. Nieuwenstein;	H. van Rijn	<i>AST, P, R</i>
Functional Neuroscience- C track	5	Yes	M.M. Lorist;	R.J. Renken	<i>WE, R</i>
<i>Repeated Measures *</i>	5	<i>Yes</i>	<i>M.E. Timmerman;</i>	<i>J.N. Tendeiro</i>	<i>WE, MC</i>
<i>Cognitive Modelling*</i>	5	<i>Yes</i>	<i>N.A. Taatgen;</i>	<i>H. van Rijn</i>	<i>AST, PR, R</i>
Cognitive Neuropsychiatry	5	No	Marie-Jose van Tol;	A. Aleman	<i>WE, P, AST</i>
N track					
Functional Neuroscience – N track	5	Yes	S.M. Kooistra;	H.W.G.M. Boddeke	<i>WE, R</i>

Pathology of the Nervous System	4	No	W. F.A. den Dunnen;	B. 't Hart	WE, AST, P
Molecular and Cellular Neuroscience	5	Yes	U.L.M. Eisel;	E.A. van der Zee	P, WE
Stem Cell and Glia Biology	5	Yes	B.J.L. Eggen;	H. van Weering	P, WE, R
Module for B- and N-track					
Statistics for BCN Master students	1	Yes	I.Pen,	J.C.Billeter	AST
BCN core modules					
Auditory and Visual Perception	5	No	A.Sarampalis;	E.G. Akyürek	P, WE
Behavioural Pharmacology	5	No	J.D.A. Olivier;	M.H. Kas	P, WE, R
Human Neuroanatomy	5	Yes	J. Georgiadis;	P. Room	PR, WE
Philosophy of Neuroscience*	5	No	C.F. Romero		AST

** these courses are not organized by the BCN research master*

This table shows all the study components for each year of the programme, and the intended examiner(s) and assessment modes. This satisfies requirement 3 in the Protocol of Duties and Powers of the Board of Examiners of the Faculty of Mathematics and Natural Sciences:

Before the academic year commences, the Board of Examiners determines the examiners responsible for carrying out testing and assessment in the degree programme.

The abbreviations for the relevant teaching methods are explained in the legend of the table. Examples of assessment modes include:

- Written exam with open questions (WE)
- Written exam with multiple-choice questions (MC)
- Oral exam (OR)
- Report and/or presentation relating to an assignment (R,P)
- Assessment of homework assignments (AST)
- Assessment of practical assignment (PR)
- Other assessment mode to be specified (ALT)

4: Relationship between course units and details of the learning outcomes

This table shows the relationship between the learning outcomes and the course units of the curriculum.

(X: makes a substantial contribution to the specified learning outcome; 0: makes a limited contribution to the specified learning outcome; -: makes no contribution)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Learning objective																	
Introduction to BCN	-	X	-	0	X	0	X	-	-	-	-	X	-	-	-	-	0
Career Related Topics	-	0	0	X	X	0	X	-	X	X	X	X	-	X	X	-	0
Colloquium	0	X	-	0	-	-	X	-	-	-	-	X	X	-	X	X	X
Essay/ PhD-proposal **	X	0	-/ X *	-	-	-/ X *	-	-/ X *	-	0	-/ X *	X	X	-	X	X	X
Minor Project	X	-	X	X	0	X	0	X	X	X	0	X	X	X	X	X	0
Major Project	X	-	X	X	0	X	0	X	X	X	0	X	X	X	X	X	0
Summer Symposium I/II	0	X	-	0	-	-	X	-	-	-	-	X	X	-	X	X	X
B track																	
Timing of Behaviour	X	-	0	X	-	X	0	X	-	-	-	X	0	-	X	-	X
Function and Evolution of Behaviour	X	0	0	0	0	0	0	0	0	0	-	X	X	0	X	X	X
The Neuroendocrine Basis of Behaviour	X	-	X	0	0	0	0	0	0	X	-	X	X	0	X	X	X
Individuality of Behaviour (new course under development)	X	-	X	0	0	0	0	0	0	X	-	X	X	0	X	X	X
C track																	
Models of Cognition	X	-	X	0	0	0	0	0	0	X	-	X	X	0	X	X	X
Functional Neuro-science - C track	X	-	X	0	0	0	0	0	0	X	-	X	X	0	X	X	X
<i>Repeated Measures</i> *																	
<i>Computational Cognitive Modelling</i> *																	
Cognitive Neuropsychiatry	X	-	X	0	0	X	X	X	0	0	-	X	X	X	X	X	X
N track																	
Functional Neuro-science - N track	X	-	X	0	-	X	-	0	-	0	-	-	-	-	X	X	0

Pathology of the Nervous System	x	-	x	0	-	x	-	0	-	0	-	-	-	-	x	x	0
Molecular and Cellular Neuroscience	x	x	0	0	-	-	x	0	0	0	-	x	x	0	x	x	x
Stem Cell and Glia Biology	x	x	0	0	0	x	0	0	-	-	-	x	x	-	x	x	x
Module for B- and N-track																	
Statistics for BCN master students	-	-	x	-	-	-	-	x	-	-	-	x	-	-	-	x	-
BCN core modules																	
Auditory and Visual Perception	x	0	0	0	0	0	0	0	0	0	-	x	x	0	x	x	x
Behavioural Pharmacology	x	-	x	0	0	0	0	0	0	x	-	x	x	0	x	x	x
Human Neuroanatomy	x	0	0	0	0	0	0	0	0	0	-	x	x	0	x	x	x
<i>Philosophy of Neuroscience*</i>																	

** these courses are not organized by the BCN research master*

***Students can choose to do either an Essay or write a PhD-proposal – the contribution to the learning outcomes is different based on this choice. The PhD proposal contributes additional learning objectives 3, 6, 8 and 11.*

5. List of Examiners for 2022/2023

prof. dr. A. Aleman
dr. E.G. Akyurek
prof. dr. L. Avraamidou
dr. W. Baron
prof. dr. D. Baskent
dr. S. Bergink
prof. dr. L.W. Beukeboom
prof. dr. J.C. Billeter
prof. dr. H.W.G.M. Boddeke
dr. A.S. Boerema
dr. R.M. Bongers
dr. C. Borg
dr. J.P. Borst
prof. dr. K.A. Brookhuis
dr. B. Buwalda
dr. F. Cnossen
prof. dr. F.W. Cornelissen
dr. B. Curcic-Blake
dr. G. van Dijk
dr. M.W.G. van Dijk
prof. dr. P. van Dijk
dr. W.F.A. den Dunnen
dr. A.M. Dolga
dr. J. Doorduyn
dr. M.G. Elliot
prof. dr. B.J.L. Eggen
prof. dr. U.L.M. Eisel
dr. S.E. Enriquez-Geppert
dr. J.R. Georgiadis
dr. Y. Groen
prof. dr. A.G.G. Groothuis
prof. dr. E. Hak
dr. R. Havekes
prof. dr. R.H. Henning
prof. dr. G.J. ter Horst
dr. J.M.E. Huisman
prof. dr. R.A. Hut
prof. dr. H. Jaeger
prof. dr. R. de Jong
prof. dr. H.H. Kampinga
prof. dr. M.J.H. Kas
dr. F.A. Keijzer
prof. dr. M.C.J. Keijzer
dr. J.W. Kok
prof. dr. H.P.H. Kremer
prof. dr. T. van Laar
prof. dr. J.D. Laman
dr. M.J.J. Lommen
prof. dr. M.M. Lorst
dr. S. Mathot
dr. A.D.J. Martens
prof. dr. N.M. Maurits

dr. P. Meerlo
dr. M.R. Nieuwenstein
prof. dr. ir. E.A.A. Nollen
prof. dr. G.J.M. van Noord
Prof. dr. J.D.A. Olivier
dr. J.T.M.L. Paridaen
dr. S.J. van Tuinen-Pyott
dr. D. van Ravenzwaaij
dr. R.J. Renken
dr. B.J. Riedstra
prof. dr. D.H. van Rijn
prof. dr. J.B.T.M. Roerdink
dr. A. Rofes
dr. C.F. Romero Toro
dr. M. aan het Rot
dr. A. Sarampalis
prof. dr. A.J.W. Scheurink
prof. dr. M. Schmidt
prof. dr. R.A. Schoevers
prof. dr. L.R.B. Schomaker
prof. dr. O.C.M. Sibon
prof. I.E.C. Sommer
dr. S.A. Sprenger
prof. dr. N.A. Taatgen
dr. A.M. Tamminga
dr. J.N. Tendeiro
prof. dr. M.E. Timmerman
dr. M.J. van Tol
dr. L.M. Veenhoff
dr. W.A. Veling
dr. D.S. Verbeek
prof. dr. S. Verhulst
prof. dr. M.E. Visser
dr. E.F.J. de Vries
dr. M.K. van Vugt
prof. dr. D. de Waard
prof. dr. P.C.A. van der Wel
prof. dr. B. Wertheim
prof. dr. M.B. Wieling
dr. A.A. Wijers
dr. M.H.F. Wilkinson
prof. dr. E.A. van der Zee
dr. I.H. Zuhorn