

# Appendices master's degree programme Behavioural and Cognitive Neurosciences (research master) 2018-2019

## Appendix I Teaching outcomes of the degree programme (art. 1.3)

The general purpose of the master's degree programme is reflected in the following list of qualifications to be achieved by the graduates of the programme.

<b>Learning outcomes of the BCN research master programme</b>	<b>Dublin descriptors</b>
<p><i>Students have acquired</i></p> <ul style="list-style-type: none"> <li>a. a broad overview of important contemporary issues in the area of behaviour, cognition, and neurosciences.</li> <li>b. specialized knowledge in one of the three subfields of behaviour, cognition or neurosciences.</li> <li>c. understanding of the need for multidisciplinary approaches and appreciation of the complexity of the brain.</li> <li>d. the capacity to listen to and understand approaches in the other fields, such that they develop a broader, integrated view to the complex problems emerging.</li> <li>e. experience with modern techniques and research approaches.</li> <li>f. knowledge of experimental designs and statistical models.</li> <li>g. a positive critical attitude in the evaluation of scientific results, views and concepts.</li> </ul>	<p><b>Knowledge and Understanding</b> 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.</p>
<p><i>Students have demonstrated the ability</i></p> <ul style="list-style-type: none"> <li>h. to apply specialised knowledge in one of the three subfields of behaviour, cognition or neurosciences.</li> <li>i. to approach scientific problems within the field in a multidisciplinary setting and to appreciate the complexity of the brain.</li> <li>j. to listen to and understand approaches in the other fields, such that they develop a broader, integrated view to the complex problems emerging.</li> <li>k. to apply modern techniques and research approaches.</li> <li>l. to apply knowledge of experimental designs and statistical models.</li> <li>m. to evaluate scientific results, views and concepts with a positive critical attitude</li> </ul>	<p><b>Applying knowledge and understanding</b> 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.</p>
<p><i>Students have demonstrated the ability</i></p> <ul style="list-style-type: none"> <li>n. to conduct scientific research, taking into account the limitations of available information and scientific problems in behaviour, cognition and neuroscience.</li> <li>o. to obtain an overview of the core issues in a scientific area in a short period of time</li> </ul>	<p><b>Applying knowledge and understanding</b> Students can apply their knowledge and judgements.</p>

<p>p. to reflect on the social and ethical responsibilities linked to the application of their knowledge and judgements.</p>	
<p>q. Students have demonstrated the ability to present scientific research in written and verbal form, taking into account the limitations of their conclusions.</p>	<p><b>Communication</b> Students can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously.</p>
<p><i>Students have demonstrated</i></p> <ul style="list-style-type: none"> <li>r. the skills required for further study in a largely self-directed or autonomous manner</li> <li>s. to have an efficient time management.</li> <li>t. to recognize the need for, and an ability to engage in, ongoing learning.</li> <li>u. to have an understanding of the requirements for a successful scientific career and the ability to judge whether he/she fulfils these requirements.</li> <li>v. to have acquired a general work orientation that is required for participation in a research team, contributing to collective goals, effective time management, and participation in a research network.</li> <li>w. to understand and respect guidelines of scientific integrity.</li> <li>x. The ability to secure a research project either at the home institution or, and this is encouraged, abroad</li> </ul>	<p><b>Learning skills</b> Students have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.</p>

## **Appendix II Specializations of the master's degree programme (art. 2.2)**

The master's degree programme comprises three tracks. Students can choose to follow one of the tracks or a combination of two tracks.

- Animal and Human Behavioural Neurosciences (B-track)
- Cognitive Neuroscience and Cognitive Modelling (C-track)
- Molecular and Clinical Neurosciences (N-track)

## Appendix III Content of master's degree programme (art. 2.3)

The master's degree programme consists of:

1. Overall programme:

Module	ECTS	Entry requirements	Comments
Introduction to BCN	4	-	
Career related topics	3	-	
Colloquium	3	-	
Track specific modules	20	-	
Minor research project	29	-	
Summer symposium I	1	Minor thesis	Students are required to participate twice in the summer symposium: Once after the minor research project and once after the major research project.
Optional modules	15		Modules from the list in appendix D. Students in the second year choose three of these modules. Entry requirements may differ per course unit.
Essay	4	-	Alternatively, students are allowed to write a PhD research proposal
Major research project	40	Minor thesis	
Summer symposium II	1	Major thesis	Students are required to participate twice in the summer symposium: Once after the minor research project and once after the major research project.

Type of assessments per course and whether there is a practical is determined in the assessment plan of the programme.

**2. Track specific modules:**

**B-track (20 ECTS)**

Module	ECTS	Entry requirements	Comments
Timing of behaviour	5	-	-
Function and evolution of behaviour	5	-	-
The neuroendocrine basis of behaviour	5	-	-
Individuality of behaviour	5	-	-

**C-track (20 ECTS)**

Module	ECTS	Entry requirements	Comments
Models of cognition	5	-	-
Functional neuroscience C track	5	-	-
Elective module	5	-	Module from the “elective modules C-track” list. Students from the C-track choose one of these modules.
Repeated Measures	5	-	-

**N-track (20 ECTS)**

Module	ECTS	Entry requirements	Comments
Functional neuroscience N track	5	-	-
Pathology of the nervous system	5	-	-
Molecular and cellular neuroscience	5	-	-
Stem cell and glia biology	5	-	-

**3. Elective modules C-track**

Module	ECTS	Entry requirements	Comments
Cognitive modelling: Basic principles and methods	5	-	-
Cognitive neuropsychiatry	5	-	-
Molecular and cellular neuroscience	5	-	-

## Appendix IV Electives (art. 2.4)

The following list presents electives. They are divided into four categories.

- I. All track specific modules within the master's degree programme (see appendix C)
- II. BCN core-modules. These modules are especially designed for the BCN research master. The BCN research master ensures that these modules do not interfere with other modules offered by the master's degree programme. The following list presents the BCN core-modules.

Module	ECTS	Entry requirements	Comments
Behavioural pharmacology	5	-	-
Human neuroanatomy	5	-	-
Philosophy of neuroscience	5	-	-
Auditory and visual perception	5	-	-
Membrane biology and disease	5	-	-

- III. BCN approved modules. No approval is needed for selecting these courses as optional course. However, master's degree programme cannot guarantee that these courses do not interfere with the other modules offered. It is the student's responsibility to ensure that the selected modules do not interfere. Modules can be chosen from different departments, as presented in the following lists.

### 1. Modules organised by the Faculty of Science and Engineering

Module	ECTS	Entry requirements	Comments
Advanced self-organisation of social systems	5	-	-
Animal and human experimentation	5	-	Module can be only followed as part of the minor or major project.
Language modelling	5	-	-
User models	5	-	Bi-annually
Machine learning	5	-	-
Current themes in biomedicine	5	-	-
Radioisotopes in experimental biology	5	-	BSc degree in life sciences or related BSc degree programme
Neurobiology of nutrition	5	-	-
Nutrition, brain development and cognition	5	-	-
Molecular biology of ageing and age-related diseases	5	-	-

### 2. Modules organised by the Faculty of Behavioural and Social Sciences

Module	ECTS	Entry requirements	Comments
Current topics of intergroup	5	-	-

relations in society			
Boundaries of psychology	5	-	-
Neuropsychology and psychiatric disorders	5	-	-
Multivariate Models	5	-	-

### 3. Modules organised by the Faculty of Arts

Module	ECTS	Entry requirements	Comments
Natural language processing	5	-	-

### IV: Courses selected by students.

Upon request of the student, the Board of Examiners can give permission to follow a course that is not mentioned in category I, II or III.

The request procedure must be started at least 4 weeks before the beginning of the course. The procedure is started as soon as the Board of Examiners receives a letter in which the permission is requested. In this letter, the student must state the content and relevance of the selected course for their individual curriculum.

The Board of Examiners will decide on an individual basis if permission is granted. The student will be informed in writing about the decision on their permission within 4 weeks.

## **Appendix V Entry requirements and compulsory order of examinations (art. 3.4)**

1. The following list presents the compulsory order of examinations.

### **Order of modules:**

- Introduction to BCN
- Track specific modules
- Career related topics
- Minor research project
- Summer symposium I\*
- Colloquium: must be presented in the second semester
  
- Optional modules
- Essay: must be completed at the end of the fourth semester
  
- Major research project
- Summer symposium II\*

\* Students are required to participate twice in the summer symposium: Once after the minor research project and once after the major research project.

2. Upon request of the student the Board of Examiners can give dispensation of the compulsory order of examinations.



## Appendix VI Admission requirements (art. 5.1.1)

1. Students in possession of an admission permit can be admitted to the degree programme.
2. Students who meet the requirements are provided with an admission permit by the Admissions Board.
3. An admission permit is only valid for the academic year following the academic year in which the permit is granted.
4. There may be other conditions attached to the admission permit. The requirements must be met before the master's degree programme has started.
5. The admission requirements comprise:
  - a bachelor's degree affiliated to the behavioural, cognitive and/or neurosciences, this will be judged by the Board of Admissions;
  - sufficient knowledge of the English language;
  - sufficient knowledge of the relevant sciences;
  - a suitable attitude, motivation and talent to follow the master's degree programme.
6. Students apply to the admission procedure by sending in the following documents:
  - a completed application form;
  - a curriculum vitae;
  - a document that proves sufficient proficiency in the English language (see 9.);
  - a survey of the study results attained in academic courses so far;
  - a letter of motivation in which the student states why s/he wants to follow the master's degree programme in particular (including which track) and what his/her expectations and ambitions are;
  - (if desired) results of former research projects, like reports or articles;
  - the names of two scientists willing to provide personal information on the applicant;
  - (if desired) other documents that the student thinks useful in furthering his/her application.

International students (these are students with a non-Dutch Bachelor degree) need to submit their application via the online application system of the University of Groningen to the Admissions Office. The admission deadlines are presented in Appendix G.

Students with a Dutch Bachelor degree need to send their application to the secretary of the Admissions Board. The admission deadlines are presented in Appendix D.

7. All students for whom English is not their native language must satisfy the following requirements (similar for all English-taught master programs at the University of Groningen):

IELTS (Academic):	6.5 - no less than 6.0 on each section
TOEFL IBT (internet-based test)	92 - no less than 21 on each section
TOEFL CBT (computer-based test)	237 - no less than 21 on each section
TOEFL PBT (paper-based test)	580 - no less than 55 on each section

Cambridge English	CAE or CPE Certificate
English language test - University of Groningen Language Centre	Minimum section scores C2 or C1 (one B2 allowed)

- The test scores cannot be older than two years.
- The modality required is 'academic'.
- You may apply for a degree programme, even though you have not yet taken an English language test or while your test score is still insufficient. In that case, you might be conditionally admitted with one of the conditions for final admission being that you take and pass a (new) test. Please inform the Admissions Office of the date on which you are planning to take such a test.

Exemptions from proving proficiency in English are:

- native speakers having completed secondary education in one of the following countries: USA, UK, Ireland, New Zealand, Australia;
- have already completed a bachelor programme in one of the following countries: USA, UK, Ireland, New Zealand, Australia;
- have an International Baccalaureate, with English as the medium of instruction;
- have a European Baccalaureate diploma, with English as the medium of instruction.

8. The applicants will be informed in writing about the decision on their admission within 10 working days after the deadline for submission. This may be a tentative decision, conditional on further information to be supplied by the candidate.

### **Appendix G Application deadlines for admission (art. 5.6.1)**

<b>Deadline of Application</b>	<b>Non-EEA students</b>	<b>EEA students</b>
Behavioural and Cognitive Neurosciences	May 1 <sup>st</sup> 2019	May 1 <sup>st</sup> 2019

### **Decision deadlines (art. 5.6.3.)**

<b>Deadline of Decision</b>	<b>Non-EEA students</b>	<b>EEA students</b>
Behavioural and Cognitive Neurosciences	May 16 <sup>th</sup> 2019	May 15, 2019

After a positive decision by the Admission Board, a reaction by the student whether or not they will accept the offer is expected within 10 working days.