



NVAO • THE NETHERLANDS

# INITIAL ACCREDITATION

ACADEMIC BACHELOR

B BRAIN SCIENCE

Maastricht University

SUMMARY REPORT

27 JUNE 2023



## 1 Peer review

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and the advisory report. The focus is on the curriculum, the teaching and learning environment, and student assessment.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) takes a formal decision on the quality of the new programme based on the outcome of the peer review. This decision can be positive, conditionally positive or negative. Following a positive NVAO decision with or without conditions the institution can proceed to offer the new programme. Upon completion of the programme graduates are entitled to receive a legally accredited degree.

This summary report contains the main outcomes of the peer review. A full report with more details including the panel's findings and analysis is also available. NVAO bases an accreditation decision on the full report.

Both the full and summary reports of peer reviews are published on NVAO's website [www.nvao.net](http://www.nvao.net). There you can also find more information on NVAO and peer reviews of new programmes.

## 2 Panel

### Peer experts

- Prof. dr. Elly Hol (chair), professor of Glia biology of brain diseases, Utrecht University, member of the Academia Europaea, and head of the department of Translational Neuroscience at the University Medical Center Utrecht Brain Center
- Prof. dr. Sander Bohté, professor of Cognitive Computational Neuroscience, University of Amsterdam, and senior researcher in the CWI Machine Learning group
- Prof. dr. Wim Vanduffel, professor Faculty of Medicine, head of the Research Group Neurophysiology, and head of the Laboratory for Neuro- and Psychophysiology, KU Leuven, and assistant professor, Harvard Medical School, Boston
- Loes Damhuis BSc, (student-member), student pre-master Clinical Psychology, Open University, and Bachelor of Social Work, HAN University of Applied Sciences, Arnhem/Nijmegen

### Assisting staff

- Dr. Duco Duchatteau MBA, secretary
- Michèle Wera MA, NVAO policy advisor and process coordinator

### Site visit

23 May 2023, Maastricht University

### 3 Outcome

The NVAO approved panel reaches a positive conclusion regarding the quality of the BSc Brain Science offered by Maastricht University. The programme complies with all standards of the limited NVAO framework.

The BSc Brain Science offers a well-defined and challenging profile. The programme aims to train a new generation of professionals who study the complex structure and functioning of the human brain in a transdisciplinary manner. In other words, students learn to look beyond the boundaries of a single discipline. The underlying disciplines are psychology, biology and computational science. The student learns to combine insights from these three disciplines. This allows the graduate to become a bridge builder between the different disciplines and between science and practice.

Maastricht University developed an attractive and coherent three-year full-time academic programme. In the first two years, the student follows a more or less fixed curriculum. In the third year, the student chooses his or her own profile with in-depth electives and a thesis research project in one of the different fields. The programme allows students to gain understanding of the three underlying disciplines, while still achieving sufficient depth for an academic bachelor's programme.

The programme is unique, especially at bachelor level. The input from three different faculties ensures that students have a broad perspective. The curriculum has been designed in such a way that it has truly become "transdisciplinary". The way Maastricht University has implemented problem-based learning can contribute. The programme is well designed and worked out in great detail. The panel does think, however, that the programme can be challenging. The panel therefore advises the programme to monitor the student intake well and keep an eye on the study success of students with different high school profiles. The programme should also ensure that it provides adequate information to prospective students.

Because of the international character of the academic discipline and strong employer preferences, Maastricht University offers the programme in English. In addition, the programme expects to attract a large number of foreign students. Maastricht University has motivated the choice for English as the chosen language of instruction well.

The academic staff is knowledgeable in the field they teach and well trained for their roles in the Maastricht University Problem-based Learning concepts. Many staff members were involved in the development of the programme, and they are eager to start. The panel appreciates the staff's enthusiasm.

Maastricht University has a clear vision on student assessment that has been well implemented. The panel deems the examinations to be valid and reliable. Processes to ensure objective and independent assessment are in place.

The panel has made a recommendation to reconsider the manner on which some of the committees are organised. Brain Science specific committees with members coming from all three faculties would do justice to the transdisciplinary nature of the programme. The large number of expected new students as well as the innovative nature of the programme provide additional arguments to opt for another way of organising the committees. This recommendation is, however, one of the few recommendations the panel has made. All in all, the panel is very positive about the proposed programme.

Maastricht University expects graduates from the BSc programme in Brain Science to make a meaningful contribution to the development of the field. The panel agrees wholeheartedly.

### 4 Commendations

The programme is commended for the following features of good practice.

1. Innovative programme – The programme combines the disciplines psychology, biology and computational science in a unique and novel manner.

2. Transdisciplinary approach – The programme has a truly transdisciplinary approach: students are consistently trained to think across the borders of the three underlying disciplines.
3. Stakeholder involvement – Both external stakeholders (potential employers) and internal stakeholders (scientists) from three different faculties were involved in developing the programme. The programme is widely supported by academic staff and the professional field alike.
4. Coherence – Despite the fact that the programme is built from three distinct underlying disciplines (psychology, biology and computational science), the programme has succeeded in developing a well-structured and coherent curriculum. In addition, processes are in place to avoid overlap and to ensure that elements of the programme that are taught in parallel, enforce one another.
5. Well-developed plans – Not only the programme as a whole is well-developed. The detailed design of the various individual courses and projects testifies to a meticulous development process.

## 5 Recommendations

For further improvement to the programme, the panel recommends a number of follow-up actions.

1. Information provision – Communicate clearly to potential students about the ambitious level and the science-oriented nature of the programme. Be transparent about the importance of sufficient proficiency of high school mathematics, chemistry, physics, and biology.
2. Enrolment – Monitor the enrolment into the programme, including the profile and chosen final examination subjects of matriculants. The programme might prove to be more challenging for matriculants with a Nature and Health (Natuur en Gezondheid) profile without Mathematics B.
3. Education Programme Committee – Take the interfaculty and transdisciplinary nature of the programme into account when deciding on the composition of the Education Programme Committee. Also, the large number of students and the novel character of the programme provide arguments to opt for a dedicated Brain Science Education Programme Committee with staff committee members representing all three faculties.
4. Board of Examiners – Take the interfaculty and transdisciplinary nature of the programme into account when deciding on the composition of the Board of Examiners. Also, the large number of students and the novel character of the programme provide arguments to opt for a dedicated Board of Examiners with members from all three faculties, who bring complementing expertise to the table.

## 6 What comes next?

NVAO grants initial accreditation to a new programme on the basis of a panel's full report. The decision is valid for a maximum of six years. For conditional accreditation other regulations apply. Upon accreditation the new programme will follow the NVAO review procedures for existing programmes. NVAO publishes the accreditation decision together with the full report and this summary report.<sup>1</sup>

Each institution has a system of quality assurance in place ensuring continuous follow-up actions and periodic peer-review activities. Peer reviews help the institution to improve the quality of its programmes. The progress made since the last review is therefore taken into consideration when preparing for the next review. The follow-up activities are also part of the following peer-review report. For more information, visit the institution's website.<sup>2</sup>

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<sup>1</sup> <https://www.nvao.net/nl/besluiten>

<sup>2</sup> <https://www.maastrichtuniversity.nl>

## 7 Summary in Dutch

Het panel oordeelt positief over de kwaliteit van de wo bachelor BSc Brain Science van de Universiteit Maastricht Dit is de uitkomst van de kwaliteitstoets uitgevoerd door een panel van peers op verzoek van de Nederlands-Vlaamse Accreditatieorganisatie (NVAO). Voor deze beoordeling heeft het panel gesprekken gevoerd met de opleiding op 23 mei 2023.

De BSc Brain Science presenteert een ambitieus en vernieuwend profiel. De Universiteit Maastricht wil een nieuwe generatie professionals op leiden die de complexe structuur en werking van het menselijk brein op een transdisciplinaire manier bestuderen. Dat wil zeggen, dat studenten leren om over de grenzen van één discipline heen te kijken. De onderliggende vakgebieden zijn psychologie, biologie en computerwetenschappen. De student leert om inzichten uit deze drie vakgebieden te combineren. De afgestudeerde wordt zo een bruggenbouwer tussen de verschillende vakgebieden en tussen wetenschap en praktijk.

De Universiteit Maastricht biedt een driejarige universitaire voltijdse opleiding. In de eerste twee jaren volgt de student een min of meer vast programma, in het derde jaar kiest de student een eigen profiel met verdiepende keuzevakken en een afstudeeronderzoek in één van de verschillende vakgebieden. Het programma stelt de student in staat om zich te ontwikkelen in de breedte van drie onderliggende disciplines en toch voldoende diepgang te bereiken, in lijn met wat van een universitaire bacheloropleiding mag worden verwacht.

De opleiding is, zeker op bachelor niveau, uniek te noemen. De inbreng vanuit drie verschillende faculteiten zorgt ervoor dat studenten breed leren kijken. Het curriculum is ook daadwerkelijk “transdisciplinair” ingevuld. De wijze waarop de Universiteit Maastricht het probleemgestuurd onderwijs heeft ingericht kan hierbij helpen. Het programma is zorgvuldig en gedetailleerd uitgewerkt. Het resultaat is een aantrekkelijk en samenhangend programma. Wel denkt het panel dat de opleiding behoorlijk pittig kan zijn, zeker voor vwo’ers zonder wiskunde B. Het panel adviseert de opleiding dan ook om de instroom goed te monitoren en het studiesucces van studenten met verschillende vwo-profielen in de gaten te houden. Ook moet de opleiding goede voorlichting geven aan scholieren.

Vanwege het internationale karakter van de betreffende vakgebieden en de sterke voorkeur van werkgevers biedt de instelling de opleiding in het Engels aan. Daarnaast verwacht de opleiding een groot aantal buitenlandse studenten aan te trekken. De Universiteit Maastricht heeft de keuze voor Engels als voertaal goed gemotiveerd.

De docenten zijn experts in het vakgebied waarin ze lesgeven en goed getraind voor hun rol in het probleemgestuurd onderwijs. Veel docenten waren betrokken bij de ontwikkeling van het programma en staan te popelen om te beginnen. Het panel waardeert het enthousiasme van de beoogde docenten.

De Universiteit Maastricht heeft een duidelijke visie op toetsing die goed is geïmplementeerd. Het panel vindt de examens valide en betrouwbaar. Processen om objectieve en onafhankelijke beoordeling te waarborgen zijn aanwezig.

Het panel adviseert om de manier waarop de opleidingscommissie en de examencommissie zijn ingericht te heroverwegen. Specifieke Brain Science commissies met leden afkomstig van alle drie de faculteiten doen meer recht aan het transdisciplinaire karakter van de opleiding. Het grote aantal verwachte studenten en het innovatieve karakter van de opleiding zijn extra argumenten om te kiezen voor een andere inrichting van deze commissies. Deze aanbeveling is echter een van de weinige die het panel doet. Al met al is het panel zeer positief over het voorgestelde programma.

De Universiteit Maastricht verwacht dat afgestudeerden van de BSc Brain Science een betekenisvolle bijdrage gaan leveren aan de ontwikkeling van het vakgebied. Het panel is het hier volmondig mee eens.

Meer informatie over de NVAO-werkwijze en de toetsing van nieuwe opleidingen is te vinden op [www.nvaonet.nl](http://www.nvaonet.nl). Voor informatie over de Universiteit Maastricht verwijzen we naar de website van de instelling.<sup>3</sup>

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<sup>3</sup> <https://www.maastrichtuniversity.nl/nl>

