



MSc Biomedical Sciences
MSc Master in Health Sciences
MSc Neuroscience and Cognition
Utrecht University

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Summary

Standard 1. Intended learning outcomes

Based on the reviewed documents and discussions during the site visit, the panel concludes that the programmes' intended learning outcomes are appropriate to an academic master's level and align with expectations in the field. The panel appreciates the research focus of the programmes. Identical learning outcomes were chosen for the separate programmes, which the panel understands as they reflect general competences valid for all programmes. At the same time, the panel suggests adding programme-specific learning outcomes or specify the common learning outcomes in more detail through programme-specific sub-learning outcomes, to better differentiate between the three MSc programmes.

Standard 2. Teaching-learning environment

The panel considers the curriculum of all three programmes to be well-structured and coherent and concludes that the programmes and their specializations have adequately translated the shared ILOs into a curriculum that covers all essential knowledge and skills in a way that is uniform across the GSLS. The panel appreciates the flexibility of the curricula, as well as the opportunities that students have to diversify in their choice of specializations and profiles. The education is delivered in a small-scale, intensive setting by committed and suitably qualified teaching staff, with students divided over multiple smaller specializations in the larger BMS degree programme. The online parttime variant of the postgraduate Master in Health Sciences is appropriate, flexible and tailored to the individual needs of the students that combine the programme with a job. Students in all programmes are actively involved in structuring their education. The panel values the professionally organized programmes, the involvement of the various faculties, and the strong alignment within the GSLS. The flexibility of the programmes offers room for students to shape the curriculum to their preferences.

The panel concludes that the curriculum is demanding but feasible, and students are well-supported throughout the programme, although the availability of study advisors is a concern. The panel supports the efforts made to improve the feasibility of the programmes, particularly for the master's degree programmes (BMS and Neuroscience and Cognition), that offer the most flexibility. It recommends bringing "space to breathe" in the programmes, as well as to find a balance between offering more structure to students and freedom of choice, since the latter currently contributes to study stress. The programmes are well aware of the issues with planning stress regarding the master's admission procedure for students.

The panel recommends improving uniformity in supervision throughout the programmes, for all profiles offered, and to monitor implementation of this. Furthermore, the information provided to students and teachers is comprehensive, but could be better structured to improve accessibility and transparency. Finally, the upcoming curriculum optimization could be used as an opportunity to differentiate more among the programmes.

Standard 3. Student assessment

The panel is impressed with the master's programmes' clear and transparent assessment policy and practice and considers it an efficient assessment system. The panel highly praises the proactive Board of Examiners, which has a strong role in the quality assurance of education and maintains short lines of communication with the programmes. The annual assurance cycle is well established. The panel also appreciates the clear rubrics, the variety in test methods, the transparent reporting and the concrete actions of the Assessment support panel.

There are policies and associated tools to promote uniformity in supervision. However, proper implementation of these guidelines requires additional attention, by making expectations about their interpretation explicit. In addition, the panel advises to pay attention to uniformity and transparency in assessments, including how and how often feedback is given about the thesis. It recommends documenting this better, and to require the use of rubrics and documenting feedback as underpinning of the assessment, for example by including a summary of what was discussed in the final interview. By making this more visible, the rubric can provide direction and the justification of the grade that follows becomes more transparent. The panel notes that it is important to have clear information for both students and supervisors on assessment criteria for internships, also regarding its length. The panel encourages the Assessment support panel and Board of Examiners to follow up on their actions in this regard.

Standard 4. Achieved learning outcomes

The panel finds that the master's theses and the alumni's job prospects demonstrate that the programmes learning outcomes are achieved. A high number of students continue in academia, highlighting the programmes research focus. The panel praises the programme for this high level. At the same time, it encourages the programmes to keep career pathways outside of research after graduation within focus.

Score table

The panel assesses the programmes as follows:

M Biomedical Sciences

Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard

General conclusion positive

M Master in Health Sciences

Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard

General conclusion positive

M Neuroscience and Cognition

Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard

General conclusion positive

Prof. dr. Hans van Leeuwen
Chair

Carlijn Braam MA
Secretary

Date: 19 March 2024

Introduction

Procedure

Assessment

On 15 and 16 January 2024, the master's degree programmes Biomedical Sciences, Health Sciences and Neuroscience and Cognition of Utrecht University were assessed by an independent peer review panel as part of the cluster assessment Biomedical Sciences. The assessment cluster consisted of 18 programmes, offered by Wageningen University and Research, the Free University of Amsterdam (VU), the University of Amsterdam (UvA), Leiden University, the Radboud University, Maastricht University and Utrecht University. The assessment followed the procedure and standards of the NVAO Assessment Framework for the Higher Education Accreditation System of the Netherlands (September 2018).

Quality assurance agency Academion coordinated the assessment upon request of the cluster Biomedical Sciences. Peter Hildering and Jessica van Rossum acted as coordinators and Annemarie Venemans, Hester Minnema, Carlijn Braam and Jessica van Rossum acted as secretaries in the cluster assessment. They have been certified and registered by the NVAO.

Preparation

Academion composed the peer review panel in cooperation with the institutions and taking into account the expertise and independence of the members as well as consistency within the cluster. On 25 July 2023, the NVAO approved the composition of the panel. The coordinator instructed the panel chair on his role in the site visit according to the Panel chair profile (NVAO 2016).

The programmes chose a development oriented assessment. The programmes composed a site visit schedule in consultation with the coordinator (see appendix 3). The programmes selected representative partners for the various interviews. The student interview included students from each degree programme, including a parttime master's student from the Master in Health Sciences. The programmes also determined that the development dialogues would be made part of the site visit as theme sessions. A separate development report was made based on these dialogues.

The programmes provided the coordinator with a list of graduates over the period 2021-2023. In consultation with the coordinator, the panel chair selected 15 theses per master's programme. They took the diversity of final grades and examiners into account, as well as the various specializations. For the MSc Biomedical Sciences, the selection covered all eight specializations. The selection for the postgraduate Master in Health Sciences included theses from both the fulltime and parttime variants. Prior to the site visit, the programmes provided the panel with the theses and the accompanying assessment forms. They also provided the panel with the information file and reading guide and additional materials (see appendix 4).

The panel members studied the information and sent their initial findings to the secretary. The secretary collected the panel's questions and remarks in a document and shared this with the panel members. In a preliminary meeting, the panel discussed the initial findings on the information file and the theses, as well as the division of tasks during the site visit. The panel was also informed on the assessment framework, the working method and the planning of the site visits and reports.

Site visit

During the site visit, the panel interviewed various programmes representatives (see appendix 3). The panel also offered students and staff members an opportunity for confidential discussion during a consultation hour. No consultation was requested. The panel used the final part of the site visit to discuss its findings in an internal meeting. Afterwards, the panel chair publicly presented the preliminary findings.

Report

The secretary wrote a draft report based on the panel's findings and submitted it to the Academion coordinator for peer assessment. Subsequently, the secretary sent the report to the panel for feedback. After processing this feedback, the secretary sent the draft report to the programmes in order to have it checked for factual irregularities. The secretary discussed the ensuing comments with the panel chair and changes were implemented accordingly. The panel then finalized the report, and the coordinator sent it to Utrecht University.

Panel

The following panel members were involved in the cluster assessment

- Prof. dr. Hans van Leeuwen, professor of Calcium and Bone Metabolism, Erasmus MC – chair;
- Dr. Annik van Keer, Education Policy Adviser, Utrecht University;
- Dr. Mieke Latijnhouwers, Assessment Expert, Wageningen University & Research;
- Prof. dr. Frans Ramaekers, emeritus professor Molecular Cell Biology at Maastricht UMC and CSO and QA Manager at Nordic-MUbio;
- Prof. dr. Jan Eggermont, biomedical researcher in Cell Physiology, KU Leuven;
- Dr. Geert Ramakers, associate professor Translational Neuroscience, UMC Utrecht;
- Dr. Leo Schouten, associate professor Cancer Epidemiology, Maastricht University;
- Prof. Marjukka Kolehmainen, professor of Food and Health, University of Eastern Finland;
- Liliane Bouma-Ploumen MSc, Policy Adviser secondary education, Bètapartners;
- Dr. Maud Huynen, assistant professor Planetary Health, Maastricht University;
- Dr. Margot Kok, Education Policy Department Manager, Utrecht University;
- Prof. dr. Dennis Claessen, professor of Molecular Microbiology, Leiden University;
- Emma van Wijk BSc, master student Biomedical Sciences, Radboud University – student member;
- Daphne Louws BSc, master student Nutrition and Health, Wageningen University & Research – student member;
- Prof. dr. Mieke Verstuyf, professor of Clinical and Experimental Endocrinology, KU Leuven – referee;
- Dr. Jur Koksma, assistant professor Transformative Learning, Radboud University – referee;
- Prof. dr. Ton Bisseling, emeritus professor of Molecular Biology, Wageningen University & Research – referee.

The panel assessing the master's programmes at Utrecht University consisted of the following members:

- Prof. dr. Hans van Leeuwen, professor of Calcium and Bone Metabolism, Erasmus MC – chair;
- Dr. Mieke Latijnhouwers, Assessment Expert, Wageningen University & Research;
- Prof. dr. Frans Ramaekers, emeritus professor Molecular Cell Biology at Maastricht UMC and CSO and QA Manager at Nordic-MUbio;
- Prof. dr. Dennis Claessen, professor of Molecular Microbiology, Leiden University;
- Emma van Wijk BSc, master student Biomedical Sciences, Radboud University – student member;

- Prof. dr. Mieke Verstuyf, professor of Clinical and Experimental Endocrinology, KU Leuven – referee;
- Dr. Jur Koksma, assistant professor Transformative Learning, Radboud University – referee;
- Prof. dr. Ton Bisseling, emeritus professor of Molecular Biology, Wageningen University & Research – referee.

Information on the programmes

Name of the institution:	Utrecht University
Status of the institution:	Publicly funded institution
Result institutional quality assurance assessment:	Positive
Programme name:	M Biomedical Sciences
CROHO number:	66990
Level:	Master
Orientation:	Academic
Number of credits:	120 EC
Specializations:	Biofabrication Cancer, Stem Cells and Developmental Biology Cardiovascular Health and Disease Epidemiology Health and Environment Infection and Immunity Medical Imaging Regenerative Medicine and Technology
Location:	Utrecht
Mode(s) of study:	Fulltime
Language of instruction:	English
Submission date NVAO:	May 1, 2024
Programme name:	M Master in Health Sciences
CROHO number:	75054
Level:	Master
Orientation:	Academic
Number of credits:	90 EC
Specialization:	Epidemiology Postgraduate
Location:	Utrecht
Mode(s) of study:	Fulltime, parttime
Language of instruction:	English
Submission date NVAO:	May 1, 2024
Programme name:	M Neuroscience and Cognition
CROHO number:	60704
Level:	Master
Orientation:	Academic
Number of credits:	120 EC
Specialization:	Neuroscience and Cognition
Location:	Utrecht
Mode(s) of study:	Fulltime
Language of instruction:	English
Submission date NVAO:	May 1, 2024

Description of the assessment

Previous accreditation panel's recommendations

The documentation includes an overview of how programme management has responded to the recommendations given by the previous accreditation panel (2017). Several recommendations and the follow-up actions taken were discussed with the programme management during the site visit. The panel concludes that the programme management has genuinely acted upon the recommendations. The panel is satisfied with the improvement measures and recognizes that these have improved the quality of the programme. The programme management is still in the process of addressing several recommendations, which are described in this report.

Organization

The master's degree programmes in Biomedical Sciences (BMS), Neuroscience and Cognition, and Health Sciences are part of the Graduate School of Life Sciences (GSLS), an interfaculty cooperation between Utrecht University (UU) and the University Medical Center Utrecht (UMCU). Mandated by the Deans of the Faculties of Science, Medicine, and Veterinary Medicine, the responsibility for the organization and quality of education at the GSLS lies with the Director of the School. Focus areas of the GSLS are, amongst others, selection and admissions, course and project coordination and didactic support. Student well-being and communication have been areas of attention of the last few years.

Within the GSLS framework there are five master's programmes, which are defined as master's degree programmes within GSLS. These are the three master's degree programmes organized by the Faculty of Medicine that are discussed in this report (Biomedical Sciences, Neuroscience and Cognition, and Health Sciences), and the master's degree programmes Biosciences and Science and Business that are accredited in other accreditation groups. Each specialization, which is called master's programme within GSLS, has its own programme leader and coordinator, ensuring a strong identity and community of each specialization. The School has a single Educational Committee and a single Board of Examiners for all master's degrees. There is a joint Board of Studies, chaired by the director of the School, providing a uniform underlying structure for programme content and quality control, as well as a singular mission and vision, and educational philosophy. Separate committees are in place, amongst others, to aid assessment evaluation (Assessment support panel), to manage programme coordination (Programme coordinators meeting), and to represent students (Life Sciences Representatives). The master's programmes are located at Utrecht Science Park, providing state-of-the-art research groups and equipment. Students can perform their studies in a broad interdisciplinary environment. The student population is composed of 50% UU, 25% national non-UU and 25% international students.

The three master's programmes described in this report closely work together in the context of GSLS and share many characteristics. Unless otherwise specified, the assessment, panel judgements and recommendations therefore concern all three degree programmes. The same applies to the parttime and fulltime variants in the postgraduate Master in Health Sciences: statements in this report concern both variants, unless one of the variants is explicitly indicated.

Standard 1. Intended learning outcomes

The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.

Findings

The three biomedical master's degree programmes (Biomedical Sciences, Neuroscience and Cognition and the Master in Health Sciences) aim to train future scientists and life sciences professionals who will be capable of using their acquired knowledge, understanding, and skills to conduct top-class research or hold key position outside research or academia in an international context. The programmes are intended for students with a background in Life Sciences and related fields, a clear interest in research in the area of life sciences and a sound mastery of English.

Research-intensive education, which means direct linkage between education and high-quality international research and societal challenges, is a key aspect of the programmes. The programmes also aim for flexible profiling, meaning that students can shape the curriculum to their own ambition through the choice of specialization areas and profiling. To this end, the programmes offer various specialization areas for students to choose from. The master's programme Biomedical Sciences is divided into eight specializations: Biofabrication; Cancer, Stem Cells and Developmental Biology; Cardiovascular Health and Disease; Epidemiology; Health and Environment; Infection and Immunity; Medical Imaging; and Regenerative Medicine and Technology.

Furthermore, students in each programme devote part of their curriculum (typically 33 EC) to a so-called profile. These profiles are either research oriented (General research profile, Bioinformatics, Applied Data Science, and Complex Systems) or non-research oriented (Management, Communication, Education, Life Sciences and Society, and Translational Life Sciences). The only exceptions to this are the Epidemiology students in the BMS master's programme and in the Master in Health Sciences who do not choose a profile (see standard 2). The profiles help students explore where their interests lie. Students are trained in a research-intensive environment, on topics with fundamental or translational value and societal relevance. The programmes acknowledge a growing need for graduates possessing academic skills beyond their primary focus in life sciences. Consequently, its objective is to produce professionals equipped with a diverse skill set capable of bridging gaps between academia, policy, and practical application.

The *master's programme Biomedical Sciences* is a two-year programme (120 EC) focused on training students in a broad range of biomedical disciplines. After enrolling in the programme, students choose one out of eight specializations, each with their own focus and curriculum. The specializations have a similar structure and set-up (see standard 2) but differ in the focus area in which students specialize. Typically, students follow several core courses in their specializations, as well as an individual study path comprising of electives and research projects. The focus areas are:

- *Biofabrication* focuses on multidisciplinary research on the interface of biofabrication, 3D printing techniques, material sciences and clinical applications
- *Cancer, Stem Cells and Developmental Biology* covers the field of developmental biology, molecular oncology, signal transduction, stem cell technology and molecular genetics.
- *Cardiovascular Health & Disease* is focused on (preclinical) research in cardiovascular disease mechanisms and processes.
- *Epidemiology* aims to educate students in quantitative analysis of the distribution of health and morbidity in populations (human or veterinary) and their determinants.

- *Health and Environment* covers interdisciplinary research on the interface of the health of humans, animals and environment, addressing the positive and negative human, animal and environmental health effects of chemical, physical and infectious and non-infectious biological agents.
- *Infection and Immunity* covers the field of fundamental and clinical immunology, prevention, diagnosis and treatment of infectious diseases, and disorders of immunity.
- *Medical Imaging* prepares the student for research in the field of medical imaging in the broadest sense, including the physics behind medical imaging acquisition, medical image analysis and applications in science, in the clinic and in industry.
- *Regenerative Medicine and Technology* centers on multidisciplinary research on the interface of regenerative medicine, technology and clinical applications.

The *master's programme Neuroscience and Cognition* is a two-year's master focusing on interdisciplinary research in the fields of physiology and pathophysiology of the nervous system and cognition in humans and experimental animals. The programme aims for students to be able to work in a multidisciplinary way after graduation by therefor admitting students with diverse backgrounds in biomedical sciences, AI, linguistics, and cognitive and neuro-psychology and collaborating with the Faculty of Social and Behavioural Sciences. After graduation, students are able to study brain functioning in an interdisciplinary way, after completing an individual study path consisting of courses and research projects.

The *Master in Health Sciences* is a postgraduate programme (90 EC) that prepares students for a career as epidemiological researcher. Content-wise it is similar to the Epidemiology specialization in the master's programme BMS, but it aims at students who already have a medical or biomedical master's degree, such as physicians, veterinarians and pharmacists. As students have prior academic training, it spends less time on this aspect and is therefore shorter (90 EC rather than 120 EC). The Master in Health Sciences aims to provide students with extensive knowledge and practical skills in patient-oriented research design, implementation, quantitative analysis and its application to human or veterinary medicine and public health. This is aimed to form a solid basis for health research and disease control programmes, including application in low and lower-middle income countries. Students can follow the programme either on campus in the fulltime variant, or as online distant education in the parttime variant. Both variants offer the same content, but differ in curriculum structure and teaching methods.

As GSLS aims to function as a unified life sciences domain, the intended learning outcomes (ILOs) of the three programmes have been uniformly formulated on the level of the graduate school (see Appendix 1). These ILOs are derived from the domain-specific framework for Biomedical Sciences and are formulated in accordance with the Dublin Descriptors. Further alignment with the field is pursued through an external advisory board, that advises GSLS on developments within life sciences that are relevant to the content of the programmes. Each degree programme and specialization within the degree programmes makes its own translation of the ILOs in its curriculum, with a specific focus on one of the life sciences specialized subjects as described in the ILOs.

The panel studied the profiles, aims and learning outcomes of the three programmes. It established that the GSLS learning outcomes are derived from the domain-specific reference framework for Dutch master's programmes in biomedical sciences and are formulated in accordance with the Dublin descriptors for academic master's programmes and tie in with requirements of the international professional field. The panel appreciates the research-intense focus of the three programmes, with education closely intertwined with biomedical research.

The master's programme BMS offers a broad range of attractive research specializations, allowing students to be embedded in a biomedical research field of choice. The master's programme Neuroscience and Cognition has a clear interdisciplinary character, both in terms of student population and teaching staff, providing students with a unique opportunity to study brain functioning from multiple perspectives. The Master in Health Sciences has a clear focus on professionals with previous academic education interested in specializing in epidemiology research, and is tailored to their needs.

As the intended learning outcomes are identical between the three programmes, the panel discussed the similarities and differences of the programmes during the site visit. It learnt that differences between the programmes are small, with a notable exception of the Master in Health Sciences due to its postgraduate character, which has a different execution of education, but still operates based on the GSLS educational goals. Although the set-up and structure of the programmes are quite similar, all degree programmes and their specializations focus on a specific domain in the Life Sciences as well as comparable jobs that graduates end up in, which distinguishes each programme from another. Furthermore, there is often cross-fertilization between the programmes in terms of shared courses and teaching staff. Students often cross the borders between programmes and specializations to pursue their research interest, which is aided by the identical ILOs. At the same time, there is sufficient differentiation between the degree programmes and their specializations. The panel understands the rationale of identical ILOs between the three programmes, and notes that they are sufficiently broadly formulated to allow for individual profiling between the programmes. Nevertheless, the panel thinks that the programmes could benefit from formulating domain-specific learning outcomes on top of these shared GSLS learning outcomes. This could help to better differentiate between the programmes, and better define the knowledge and skills associated with the specific domain within the Life Sciences that the programme focuses on. This differentiation could either take the shape of additional domain-specific learning outcomes or a specification of the common learning outcomes in more detail through domain-specific sub-learning outcomes.

Considerations

Based on the reviewed documents and discussions during the site visit, the panel concludes that the programmes' intended learning outcomes are appropriate to an academic master's level and align with expectations in the field. The panel appreciates the research focus of the programmes. Identical learning outcomes were chosen for the separate programmes, which the panel understands as they reflect general competences valid for all programmes. At the same time, the panel suggests adding programme-specific learning outcomes or specify the common learning outcomes in more detail through programme-specific sub-learning outcomes, to better differentiate between the three MSc programmes.

Conclusion

The panel concludes that the programmes meet standard 1.

Standard 2. Teaching-learning environment

The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.

Findings

Curriculum

The master's degree programmes *Biomedical Sciences, and Neurosciences and Cognition* follow the same structure. The main components of the curricula are core specialization courses (15 EC), electives (12 EC), a major research project (51 EC) and one of the profiles (33 EC) offered by the GSLS. These profiles are either research oriented (General research profile, Bioinformatics, Applied Data Science, and Complex Systems) or non-research oriented (Management, Communication, Education, Life Sciences and Society, and Translational Life Sciences), and typically consists of additional courses, electives and a research internship within the area of that profile. The only exceptions to this set-up are the Epidemiology and Medical Imaging specialization of the MSc BMS. In the specialization Epidemiology, the profiling space is dropped in favour of additional specialization courses (19 EC extra) and a larger major research project (14 EC extra). For the specialization courses, students choose a package of courses focused on either Clinical Epidemiology, General Epidemiology and Veterinary Epidemiology. This choice was made to accommodate the larger scope and dominant research focus of this specialization. The specialization Medical Imaging has more courses (25 EC) and a shorter profile (20 EC).

All master's students attend the Life Sciences Academy (1.5 EC), where they are supported in the development of their academic and professional skills. This Academy includes an introductory week, seminars, and three Navigation Towards Personal Excellence workshops. It supports students in defining personal goals, facilitating personal growth and reflection, and preparation for their future career, while also providing opportunities for networking and social cohesion. Furthermore, students complete a Writing Assignment (7.5 EC) by means of a literature review or a research proposal.

Students do their core specialization courses, electives and major research project in their specialization area of choice. In the MSc BMS, students choose one out of eight specializations (see standard 1), each of which has its own core specialization courses. In the MSc Neuroscience and Cognition, students choose to follow their core courses in either Experimental and Clinical Neuroscience, or Cognitive Neuroscience. Electives in both degree programmes are chosen in consultation with the programme coordinator, and usually align with the specific topic students aim to investigate in their major research project. It can also consist of additional research in a mini project or be used to add extra time to the general research profile project. The major research project is performed in the context of an internship, providing students with experience in scientific research in a relevant field, and has students perform an individual research project under supervision of a GSLS researcher. The order of the curricular components is mostly flexible, although all students start with an introductory week. The profile project, writing assignment and electives can be done elsewhere in the Netherlands or abroad on prior approval by the Board of Examiners. The quality of these external elements is guaranteed through monitoring by the GSLS and sample checks by the Assessment Support Panel (see also standard 3).

The *postgraduate Master in Health Sciences* is built on the same principles as the other two master's programmes, but has a different structure and set-up. It comprises 90 EC, consisting of 20 EC core courses, 14 EC elective specialization courses and a 56 EC major research project. Compared to the graduate master's programmes, the Life Sciences Academy, the Writing Assignment and the profiling space are dropped.

Admitted students are required to have already completed another relevant master's programme, and as a result can already demonstrate the academic and professional skills that these curriculum components focus on.

Students can follow the Master in Health Sciences either in fulltime or parttime variant. Both variants have the same 90 EC of curriculum components, but have their own learning methods and interaction with students. Whereas students in the fulltime variant follow the courses on campus together with students of the Epidemiology specialization in the MSc BMS, students in the parttime variant follow the core and electives courses through online education. Online courses are offered through the Elevate platform and are scheduled over the course of three years with a weekly study load of approximately 14 hours. This allows students to follow the courses alongside a job. Starting and exam dates of courses as well as deadlines for assignments are fixed. Additionally, students can access the course material 24/7 and study whenever and wherever they prefer. Education consists of for instance (interactive) web lectures, discussions, (group) assignments, expert sessions and quizzes. The major research project is the same as that of the fulltime variant but can have a more flexible parttime planning. It can be executed at Utrecht University, but also at another research institution or company (for instance one that is closer to the home of the student), as long as it is approved of and supervised by a UU or UMCU teaching staff member.

The panel studied the curriculum of the programmes and a selection of courses of each of the three programmes. This selection included an online course from the parttime variant of Health Sciences as well as its fulltime equivalent. The panel concludes that all programmes have translated the intended learning outcomes in a coherent and well-structured curriculum. Based on an overview provided by GSLS, the panel was able to verify that all ILOs are accurately mapped to the various curriculum components in each of the three programmes. The similar structure and the use of the same ILOs and components in all curricula safeguards that the ILOs are covered in a similar way, promoting consistency across all GSLS programmes, which the panel commends (see also Standard 1). It observed that throughout the curricula students develop relevant knowledge and skills during the courses. The research projects, the writing assignment and the profiles offer students ample opportunity to develop their research skills in close collaboration with active biomedical researchers.

It commends the freedom that students have to shape their own education through the choice of specializations and profile, shaping the programme to a more research, business, educational or societal directed career. Through the choices students make regarding their profile, research projects, writing assignment and electives, they can specialize in a particular domain; the students start with a broad programme within their specific discipline and differentiate in their second year, while becoming acquainted with the working (research) field. The panel also appreciated the flexibility and student centredness of the curricula. Students mentioned to the panel that the flexibility of the programmes is a great advantage and one of the reasons to opt for a master's programme in Utrecht. Furthermore, they informed the panel that the profiles are very helpful in orienting themselves towards different aspects of the biomedical sciences. The panel particularly appreciated the option to follow the programme online in the parttime variant, which it considers to be a very attractive option for students combining the programme with a job. The panel considers the online education offered in the parttime variant of the Master in Health Sciences to be appropriate, flexible and tailored to the individual needs of the students.

The panel noted that the Life Sciences Academy was developed following the previous accreditation visit. The panel noticed I Art My Science as best practice of interdisciplinarity, which generates stimulating ideas among staff and students. The education is offered in a small-scale, intensive setting by committed and suitably qualified teaching staff. The flexibility of the graduate master's programmes offers room for

students to shape the curriculum to their preferences. In view of the flexibility offered, the panel believes it is important to continue to provide students in the MSc Biomedical Sciences and Neuroscience and Cognition with adequate guidance. It may help to offer students somewhat more structure, for example in the form of learning paths (see Feasibility).

Internships

The programmes are centred around an internship-based learning model: the internships are a crucial aspect that students have to complete. The current design of the programme comprises a long internship to develop basic practical skills in the programmes' specialization (the major research project), followed by a shorter internship geared towards a students' profile (optionally abroad) in the second year. The mandatory nine-month major research internship, where students get the opportunity to carry out their major research project, is considered an excellent preparation for a career in the academic world. The panel inquired after the reason for the choice of a nine-month internship, since this is an extensive period of time. It learned that the main reasons for this are that it gives students the opportunity to be extensively trained in practice.

In principle, the first internship (major research project) is performed in Utrecht at UMC, Utrecht University, Hubrecht laboratory or the Princess Máxima Center for Pediatric Oncology. For both internal and external major research projects, approval of the Board of Examiners is required beforehand. As part of a pilot to increase opportunities, the programmes are currently compiling a list of quality-approved internship places elsewhere. About 75 percent of the students performs a research project and second internship as part of a research profile. About half of these students execute their second internship abroad, for which they find a position themselves. If necessary, the programme coordinator guides students in finding a position. For the internship abroad, a UU examiner is involved, the host supervisor has to meet certain criteria, and the Board of Examiners has to give permission for this. During the site visit, fulltime students from the programmes commented that combining the internship with courses can be challenging. Some students tend to experience stress due to long working hours during internships. Students of the master's programme Biomedical Sciences mentioned that some of them had to choose where to do the internship before the start of their masters' programme, without having enough information to make a well-informed choice, especially for students entering from outside UU. This, however, differs per programme or specialization. Some specializations organize an internship market for their students. Furthermore, some students received more information, such as a list with potential supervisors. Teachers indicated they usually advise students to look for a position as early as possible, already during the introduction courses (first ten weeks) or even before the start of the masters' programme, which gives them time to explore. The programme management should realize that registration before the start of the masters' programme potentially puts master students coming from outside Utrecht at a disadvantage. Currently, most students do not experience major problems finding internships, although the overall capacity remains a concern, with around 1,000 students from different programmes doing internships at the same time. The programmes have strong (inter)national networks which helps in finding an internship and in providing good mentorship.

Language and internationalization

During the site visit, the panel discussed the use of English as the language of instruction and the programme names with the programme management. The panel considers English an appropriate choice given the international orientation of the research field and the global labour market. English language proficiency (level C1) is one of the academic staff recruitment requirements. Students appreciate that the programmes are taught in English. Foreign students entering the programmes must meet English language proficiency requirements as part of their admission.

Admission and selection

The panel learned that there has been a substantial growth in student intake and even more growth is expected, causing some concerns among staff about the current student-staff ratio and the availability of internships. This is not the case for the postgraduate Master in Health Sciences, where 45 of the 60 available spots are currently filled. Selection takes place on the level of the degree programme (Neuroscience and Cognition, and Master in Health Sciences) or the specialization (Biomedical Sciences). As most master's programmes have a fixed quatum on capacity, selection is done based on a match with the content of the bachelor's degree (graduate programme) or master's degree (postgraduate programme), grades, previous experience and motivation. The programmes receive highly motivated students. The Board of Admission decides about student applications and enrolment per degree programme and/or specialization, based on the advice from the Programme Selection Committees. The fixed quota – which do not apply to the Master in Health Sciences – seem to cause stress in the bachelor period for prospective master's students, who worry about their chances of being admitted to their first-choice master's programme or specialization. The programme representatives clarified that they try to accommodate as many students as possible in their first-choice master's programme or specialization, but also point out to students that they can pursue their interests via another route, since all master's programmes lead to the same general skills and learning results due to the identical ILOs. The panel feels that this could be more explicitly communicated to students, as to put them more at ease in the choice for their master's programme.

Feasibility

Dropout rates of the programmes are low. However, students experience a high study load due to the design of the curriculum and the panel noticed that only 21-34% of the graduate students complete their programme within the nominal study period in the last 5 years. Success rates in the postgraduate Master in Health Sciences follow a different dynamic, particularly because of the parttime variant where students combine the programme with a job. Even so, 48% of postgraduate students graduate within three years. The panel notes that all three programmes should be in principle feasible, as many of the international students finish within 2 years. The delays seem to be caused primarily by the highly flexible curriculum in the fulltime graduate programmes; the ambition and planning choices students make can result in a non-optimal connection of courses. Moreover, the electives have different sizes and sometimes overlap. The writing assignment also contributes heavily to study delay, which led the programmes to discuss a proposal with the panel to redesign or replace this component for all GSLS programmes. Furthermore, the major research project can cause delays, lasting 9 months and sometimes running over the summer. According to students, feasibility depends in part on the supervisor and their expectations. The panel notes that expectations of the supervisor do not always match the expectations of the programme, where it is stressed that internships are first of all about the learning process, not primarily about results. The programmes are working on this by means of the SEED tool (see the text below at Student support and facilities). The programme management feels that it is their responsibility to better delineate the highly flexible curriculum and is exploring ways to shorten the major research project to 45 ECTS, and/or to avoid overlapping courses; a GSLS project group is currently investigating optimization of the curriculum. Also, after the visit of the former accreditation panel, several actions were taken in relation to study delay, but the time-to-degree has not decreased over the past years. For example, previously regulation allowed students to have three months delay after the major research project. With the use of OSIRIS nowadays, the end date of the major research project has to be entered on forehand and students have to request permission for delay. The panel considers this as an important point of improvement and appreciates that a curriculum optimization project group is investigating ways to decrease the time-to-degree. The panel strongly supports this initiative and stresses the importance of keeping momentum and translating investigation into implementation of identified ways to reduce the time to degree as soon as possible. The panel recommends paying attention to student well-

being and adding more structure to the curriculum, to ensure the feasibility of the programmes and to alleviate the planning stress for students.

The panel concludes that the curricula are demanding but feasible, and students in general are well-supported throughout the programme. While developing the curriculum of the future, the programmes take student signals into account. The panel is positive about the initiated curriculum optimization aiming for a future-oriented curriculum with an emphasis on multidisciplinary education and an optimal balance between theoretic knowledge, practice applications, research skills, personal growth and well-being. In doing so, the panel recommends close monitoring of educational developments at UMC and UU, and more differentiation among programmes (see standard 1). In addition to the measures already implemented to improve the feasibility of the full programmes, which the panel supports, the panel recommends continuous attention to feasibility of in particular the graduate programmes, which are the most flexible, and to not schedule GSLS courses and internships simultaneously. It appreciates the efforts made to ensure longer internships are not the norm.

The panel recommends paying attention to uniformity in supervision throughout the programme, specifically regarding the different profiles, to ensure this is optimal for all students and all exit profiles. While much attention is paid to education within GSLS, it is also important to monitor factual and correct implementation at the individual (programme coordinator/ teacher/ supervisor) level and to ensure that the same quality is provided across the programme. Next to that, the panel mentions the importance of clarifying expectations of students and supervisors, to avoid discrepancies between them.

Student support and facilities

The programmes are embedded in a small-scale educational context focused on personal guidance. The master's degree Biomedical Sciences is divided into smaller specializations, to help community building and allow for small scale guidance of students by their specific master's programme coordinator. The master's programmes in Neuroscience and Cognition, and Health Sciences have fewer students and thus are smaller in scale. Students in the parttime variant of the Master in Health Sciences have online personal contact with their teachers, receive personal support, and can interact with other students via the Elevate platform. Guidance is both reactive and proactive. This programme has thoroughly revised all courses, partly based on the recommendation of the previous accreditation committee to modernize the online education, and implemented more peer interaction and feedback. Once a week, students' progress is tracked. Students are actively approached when problems occur. In general, students from all programmes appreciate having close contact with teaching staff. As the panel learned from students, experiences sometimes differ between programmes, as some students have difficulty reaching coordinators. For all programmes counts that, next to the regular spaces for education, students do have access to the labs of UU/UMC, including state of the art equipment.

There are various forms of additional support and opportunities for students to work on their academic and personal development, both at GSLS and at university level. Also helpful is the SEED tool (Supervision Expectations & Evaluation Dialogue), which encourages students to reflect and proactively discuss with supervisors about the optimal conditions for a good learning environment. Students are satisfied with the student advisors' support on a variety of issues, including study planning and stress management. The advisors are knowledgeable and easily accessible, but not always readily available for an appointment. The panel observes that the services of student advisors are in high demand, causing some availability issues. Student advisors and teachers have an open-door policy, although some students would prefer more proactive contact in person all the same.

The panel noted the abundance of information available to students and faculty. The information on the new website is clear and easy to access, but according to students some information is difficult to find or present at multiple sites and sometimes contradictory and needs some restructuring. The panel concludes that it could be helpful to provide a general introductory lecture at the beginning of each year on where to find information about courses, student support etc., notwithstanding the programmes' premise that master's students should be able to find this information themselves. The provision of information to students is comprehensive and professional. However, according to the panel, the large amount of information requires more structure. In addition, the follow-up of and adherence to information by teachers and supervisors could benefit from streamlining, to ensure a more comparable implementation across the board of for example the teacher's guide and the rules for work field supervisors.

The panel values the professionally organized programmes, where a strong appreciation of education is noticeably present, and the added value of the involvement of the various faculties and the presence of state of the art facilities. The panel has a good impression of the alignment within the GSLS, in terms of policy, quality assurance, communication, etc. There is a congruent organization, which involves a great deal of coordination between the faculties. Students are also actively involved in education, as illustrated by their presence and input in the various development sessions. The panel is concerned about the high workload of study advisors, coupled with high student demand for tutoring, as it impacts their availability to students. It recommends ensuring adequate study advisor capacity.

Teaching staff

Education is provided by dedicated teachers with relevant disciplinary and research expertise. The master's programme Neuroscience and Cognition collaborates with the Faculty of Social and Behavioural Sciences, and includes teaching staff from this faculty to provide for interdisciplinary education. There is a close-knit community with many opportunities for peer consultation and continuing education. Staff members stay abreast of educational developments and the latest developments in the field through specialized colleagues. Teachers report that there has been an increased focus on teacher professionalisation, with defined career paths. They feel encouraged to take steps in personal and professional development and are given time and space to do so. In addition to issuing University Teacher Qualification (UTQ) certificates, the intention is to work with partial qualifications so that they can be carried over to any subsequent appointment outside UU. Course coordinators and programme coordinators need to have obtained or be in the process of obtaining their (Senior) University Teaching Qualification. PhD students and postdocs are coached in teaching and supervising.

In the interviews, the panel discussed workload with programme management and teaching staff. The number of students in the master's programmes is growing faster than the number of lecturers. Any problems experienced by teachers are subject of discussion with and between the deans. The panel spoke with teachers from the various departments, who feel highly supported and valued. Although the workload is felt, especially when given more responsibilities or due to the combination of research and teaching, it does not appear to be problematic. However, planning and coordination around courses with faculty who also work as clinicians/researchers can sometimes pose practical challenges for course coordinators. Sufficient attention is devoted to teacher professionalization, which is reflected in the commitment to obtaining teaching qualifications. Although workload appears not to be problematic for teaching staff, the panel advises programme management to keep paying attention to workload among teaching staff and in that way secure feasibility of the workload of teaching staff.

Considerations

The panel considers the curriculum of all three programmes to be well-structured and coherent and concludes that the programmes and their specializations have adequately translated the shared ILOs into a curriculum that covers all essential knowledge and skills in a way that is uniform across the GSLS. The panel appreciates the flexibility of the curricula, as well as the opportunities that students have to diversify in their choice of specializations and profiles. The education is delivered in a small-scale, intensive setting by committed and suitably qualified teaching staff, with students divided over multiple smaller specializations in the larger BMS degree programme. The online parttime variant of the postgraduate Master in Health Sciences is appropriate, flexible and tailored to the individual needs of the students that combine the programme with a job. Students in all programmes are actively involved in structuring their education. The panel values the professionally organized programmes, the involvement of the various faculties, and the strong alignment within the GSLS. The flexibility of the programmes offers room for students to shape the curriculum to their preferences.

The panel concludes that the curriculum is demanding but feasible, and students are well-supported throughout the programme, although the availability of study advisors is a concern. The panel supports the efforts made to improve the feasibility of the programmes, particularly for the master's degree programmes (BMS and Neuroscience and Cognition), that offer the most flexibility. It recommends bringing "space to breathe" in the programmes, as well as to find a balance between offering more structure to students and freedom of choice, since the latter currently contributes to study stress. The programmes are well aware of the issues with planning stress regarding the master's admission procedure for students.

The panel recommends improving uniformity in supervision throughout the programmes, for all profiles offered, and to monitor implementation of this. Furthermore, the information provided to students and teachers is comprehensive, but could be better structured to improve accessibility and transparency. Finally, the upcoming curriculum optimization could be used as an opportunity to differentiate more among the programmes.

Conclusion

The panel concludes that the programmes meet standard 2.

Standard 3. Student assessment

The programme has an adequate system of student assessment in place.

Findings

Assessment system

The assessment policy plan, which describes the vision of the GSLS on assessment and the alignment between learning outcomes and education, serves as the basis for student assessment. The panel studied the master's programmes assessment system, including the assessment plan. It concludes that GSLS has a clear assessment policy. The panel appreciates that in most study components, a mix of assessment methods is used to test the intended learning outcomes. Examination of the online courses in the parttime variant of the postgraduate Master in Health Sciences takes place via online proctoring.

The assessment of writing assignments and research projects are described in guidelines for students and examiners/supervisors, accompanied by rubrics to motivate the assessment of these components and to warrant a uniform assessment. The panel expressed appreciation for the assessment and grading process and for the clear and user-friendly rubrics, and was curious about how grading takes place based on these

rubrics. It learned that rubrics have not been set up to calculate the grade, but rather as a support system and guideline for feedback. A rationale for grading is mandatory, either via Rubrics or via a narrative. This latter can't be a decisive argument not to complete the rubric in view of the panel. The panel applauds that a new guideline has now been added to the rubrics with encouragement to use them at the beginning, halfway through and at the end of the research project. The panel advises to investigate whether encouragement is sufficient or that more strict rules are needed. Students, together with their supervisor, can also use the rubric to evaluate and monitor their progress themselves. This new practice is gaining traction, also among students.

Examiners of research projects and writing assignments are members of academic staff and are actively encouraged to obtain a UTQ. Assessments also involve an independent second assessor who is an expert in the field. The independence of this assessor is checked by the Board of Examiners. The panel appreciates the independent role of the second assessor and values the proposal that the Board of Examiners mentioned in the interview to implement that the second assessor can see what feedback was given by the supervisor and how this feedback was incorporated by the student. Part of the assessment criteria includes a response to the feedback provided.

Furthermore, at university level there are not yet guidelines on the use of Generative artificial intelligence (AI) in education. In the meantime, the programme management is actively working on the development of guidelines in the GSLS programmes. To increase teachers' and examiners' knowledge about AI, courses from the Center for Academic Teaching and Learning, among others, are available.

Assessment final products

The final products of the programmes consists of the writing assignment and the report of the (major) research project. This report contains the results of the internship of the student. The assessment of these products is described in guidelines for students and examiners/supervisors, including rubrics to motivate the assessment of these components and to warrant a uniform assessment. Examiners and supervisors are instructed by the research project coordinators (GSLs). Final products are always assessed by an UU examiner. In case of an external project, a host supervisor is supervising the student on location of the external internship. The daily supervision is either done by the supervisor at the host institute (a senior scientist), or by a PhD candidate or postdoc supported by the supervisor host institute. This host supervisor also serves as the second reviewer of the research project. In the case of an internal project, a second reviewer from the UU takes this role. The second reviewer assesses the research project independent of the first examiner, which in the eye of the panel promotes a reliable and valid assessment. During the site visit, the panel learned that the assessment of research projects is experienced as subjective by some students due to differences among internship examiners and among examiners. Differences are partly related to internship experiences abroad and outside Utrecht. The Board of Examiners noticed discrepancies between grades given by the host supervisor and those given by the Utrecht examiner and raised this issue towards the programme management and course coordinators. To ensure uniformity and transparency in assessment, the Assessment support panel is advising on guidelines for (external) examiners/supervisors and students. The Assessment support panel is also in contact with the student representatives to discuss specific cases. Through review of an annual sample, the Assessment support panel checks the uniformity in final assessments of research projects and writing assignments and whether graduating students have met all learning outcomes. In case of discrepancy between the final assessment of those reports given by the examiner versus the grades given by the Assessment support panel, which does not happen often, the Assessment support panel contacts the examiner. The peer review panel concludes that grading is in line with its own findings.

The panel learnt that students sometimes assume that successful research results affect their grading. This assumption is not correct according to the programme management. It is important that the programme management explicitly communicates about this to the students as well as the teachers. The panel questioned whether the length of internships is considered when assigning grades. It learned that students currently have to apply for an extension of their internship if they take more than 20 working days extra. This new practice has been introduced to avoid lengthy internships of 12 months, which were no exception, and can be managed well with Osiris Case. Requests are dealt with by the research project coordinator.

Board of Examiners

The GSLS has one Board of Examiners for all master's degrees, with representatives from all master's programmes. The Board of Examiners and its Assessment support panel assure the quality of testing by testing the quality of individual examinations on the basis of random samples in relation to validity and reliability, and analyzing and providing information and proposals concerning the organization of the assessments. The Board of Examiners does not often receive complaints about assessments. Usually students first go to the student advisor or the programme coordinator or research project coordinator, who can refer if necessary. When appropriate, an attempt is first made to have a conversation with the examiner. The Board of Examiners also keeps in touch with coordinators. Furthermore, the Board of Examiners underscores the value of students filling out evaluations, which the panel wholeheartedly urges students to do so and which should then be followed by feedback on the results. The panel spoke to members of the Board of Examiners and found that it is a proactively functioning board that understands its tasks and responsibilities and is accountable for them. The panel appreciates that the board has a strong role in the quality assurance of education and maintains short lines of communication with the programmes. The annual assurance cycle is well established.

Considerations

The panel is impressed with the master's programmes' clear and transparent assessment policy and practice and considers it an efficient assessment system. The panel highly praises the proactive Board of Examiners, which has a strong role in the quality assurance of education and maintains short lines of communication with the programmes. The annual assurance cycle is well established. The panel also appreciates the clear rubrics, the variety in test methods, the transparent reporting and the concrete actions of the Assessment support panel.

There are policies and associated tools to promote uniformity in supervision. However, proper implementation of these guidelines requires additional attention, by making expectations about their interpretation explicit. In addition, the panel advises to pay attention to uniformity and transparency in assessments, including how and how often feedback is given about the thesis. It recommends documenting this better, and to require the use of rubrics and documenting feedback as underpinning of the assessment, for example by including a summary of what was discussed in the final interview. By making this more visible, the rubric can provide direction and the justification of the grade that follows becomes more transparent. The panel notes that it is important to have clear information for both students and supervisors on assessment criteria for internships, also regarding its length. The panel encourages the Assessment support panel and Board of Examiners to follow up on their actions in this regard.

Conclusion

The panel concludes that the programmes meet standard 3.

Standard 4. Achieved learning outcomes

The programme demonstrate that the intended learning outcomes are achieved.

Findings

The research project(s), including practical work, a report and final presentation, and writing assignment represent all learning outcomes of the master's programmes Biomedical Sciences and Neuroscience and Cognition. The postgraduate Master in Health Sciences considers their research project as proof of competence. Reports of research projects and writing assignments are regularly published in scientific journals.

As part of its preparation for the site visit, the panel studied the final reports of the major research project of 15 students per programme. The panel concludes that the final reports are of good quality and convincingly display the (specialized) knowledge and insights gained by students. The theses demonstrate that students achieve the learning outcomes and the level and quality that can be expected of a master's thesis. For the master's degree programme Biomedical Sciences, the panel values that the final reports are well and clear written, logically structured, and include adequate reflections on possible drawbacks. In some cases the report seemed mostly aimed at experts in the field and the summary was not understandably written for laymen. The panel asks the programme to keep paying attention to students learning to communicate to laymen, also in research reporting, to prepare students sufficiently for the working field. The panel commends that the final reports of the master's programme Neuroscience and Cognition are of high quality, both in content as in scientific reporting. The reports are well set-up consistent with a research paper, and adequately responded to current research topics. In the opinion of the panel, the final reports of the master's programme Master in Health Sciences were generally of fine quality, and included well elaborated methods section and open and critical discussion of the results and clinical applicability of the results.

A majority (around 40%) of graduates of the master's programmes Biomedical Sciences, Neuroscience and Cognition, and postgraduate Master in Health Sciences start with a PhD study after finalizing their master programme, as was confirmed by a recent survey of GSLs alumni (2023). Alternatively, graduates find employment in clinical or commercial positions, as policy advisor, teacher or education developer, consultant, project manager or data analyst. Alumni report being adequately prepared for their careers, particularly by the research projects/internships. According to the alumni, the profiles align well with the labour market.

The panel is impressed with the performance of the programme's graduates, particularly the high number of alumni pursuing a career in academia. This finding clearly aligns with the programme's learning outcomes. However, as there is an increasing demand for graduates outside of the academic work field, the panel also suggests that attention to alternative career paths could be increased.

Considerations

The panel finds that the master's theses and the alumni's job prospects demonstrate that the programmes learning outcomes are achieved. A high number of students continue in academia, highlighting the programmes research focus. The panel praises the programme for this high level. At the same time, it encourages the programmes to keep career pathways outside of research after graduation within focus.

Conclusion

The panel concludes that the programmes meet standard 4.

General conclusion

The panel's assessment of the master's degree programmes in Biomedical Sciences, Neuroscience and Cognition, and the Master in Health Sciences is positive.

Development points

For all three programmes:

1. Consider adding domain-specific (sub) learning outcomes, to differentiate between the three master's programmes and their specializations
2. Keep paying attention to the feasibility of the graduate programmes:
 - Do not schedule courses and internships simultaneously to improve the feasibility of the programmes.
 - Continue to provide students with sufficient guidance to navigate the flexible curriculum and consider providing them with more structure/learning paths.
 - Restructure the large amount of information for students, teachers and supervisors, to ensure that they have access to identical and consistent information and pay attention to its correct and uniform implementation.

This is particularly the case for the graduate master's programmes BMS and Neuroscience and Cognition, which have the most flexible curricula.

3. Continue to focus on improving the transparency and uniformity of the master's admission procedure for students and on reducing the pressure associated with it.
4. Pay attention to the high workload of the teaching staff and their career perspectives to keep them motivated.
5. Pay attention to the availability of sufficient study advisors.
6. Pay attention to transparency and uniformity of supervision and assessment of internships, regarding a clear implementation of the guidelines, to ensure that this is optimal for all programmes and all profiles. Provide and document written feedback in addition to rubrics, to provide a personalized direction for the student and enhance transparency of assessment.

Appendix 1. Intended learning outcomes

Master's programmes: Biomedical Sciences, Neuroscience and Cognition, and Master of Health Sciences

The successful Life Sciences graduate:

- Knowledge and insights

- i. will be able, with the knowledge of at least one of the specialized subjects of Life Sciences, to make a substantial contribution to the development and/or application of scientific concepts and methods, in a research context;
- ii. will be able to overview the important, recent developments within the Life Sciences and to point out the implications of these developments on the Life Sciences field and society;
- iii. will be able to adequately use and interpret specialist literature in at least one of the subjects of Life Sciences.

- Apply knowledge and insights

- i. will be able to translate a Life Sciences problem into a relevant research question or approach, suitable for research development, product development, education or society;
- ii. will be able to design a suitable research plan to test the formulated research questions, according to methodological and scientific standards;
- iii. will be able to independently perform research, with the required accuracy. Graduates are able to handle, analyze, interpret and evaluate the empirically derived data in a correct manner.

- Judgement

- i. will be able to discuss the outcomes of empirical research and to link them with scientific theories;
- ii. will be able to indicate the importance of research activities for solving a biomedical question or problem, if applicable from a social perspective;
- iii. will be able to critically reflect on their own research work in Life Sciences, from a social perspective.

- Communication

- i. will be able to comprehensibly report research results verbally and in writing, to specialised and non-specialised audiences in an international context;
- ii. will function effectively in a multidisciplinary research team.

- Learning skills

- i. will have the skills to reflect on their own development and study career, and, if necessary, to motivate themselves and make any necessary adjustments;
- ii. will have the skills to function independently and result-oriented in a competitive labour market;
- iii. will have the qualification to be eligible for a PhD position or a position in another sector of the labour market;
- iv. Or a position within a matching sector of the labour market.

Appendix 2. Programme curriculum

Curriculum Biomedical Sciences

BMS specializations: Biofabrication, Cancer, Stem Cells and Developmental Biology, Cardiovascular Health and Disease, Health and Environment, Infection and Immunity, Regenerative Medicine and Technology

51
EC

Major
Research
Project

33
EC

Profile

15
EC

Mandatory
theoretical
courses

12
EC

Elective
component

7.5
EC

Writing
Assignment

1.5
EC

Life Sciences
Academy

BMS specialization: Medical Imaging

51
EC

Major
Research
Project

25
EC

Mandatory
theoretical
courses

20
EC

Profile

15
EC

Elective
component

7.5
EC

Writing
Assignment

1.5
EC

Life Sciences
Academy

BMS specialization: Epidemiology

65
EC

Major
Research
Project

34
EC

Mandatory
theoretical
courses

12
EC

Elective
component

7.5
EC

Writing
Assignment

1.5
EC

Life Sciences
Academy

Curriculum Neuroscience and Cognition

51
EC

Major
Research
Project

33
EC

Profile

15
EC

Mandatory
theoretical
courses

12
EC

Elective
component

7.5
EC

Writing
Assignment

1.5
EC

Life Sciences
Academy

Curriculum Master in Health Sciences (fulltime and parttime)



Major
Research
Project



Mandatory
theoretical
courses

Appendix 3. Programme of the site visit

Location: Hijmans van den Bergh building UMC Utrecht, Heidelberglaan 100, Utrecht (HB3.79)

Monday 15 January

Time	Part
09.45 - 10.00	Reception committee main entrance UMCU
10.00 - 10.30	Reception committee by students of the programme Students present work (assignments, theses, reports)
10.30 - 11.00	Preparation of the committee
11.00 - 12.00	Interview with programme managers
12.00 - 13.00	Lunch and consultation time committee
13.00 - 14.00	Guided tour/follow-up presentations students
14.00 - 14.45	Interview with students and alumni of bachelor's and master's programmes
14.45 - 15.00	Break
15.00 - 16.00	Development session 1: common theme for bachelor's and master's programmes
16.00 - 16.45	Interview with the Board of Examiners for the bachelor's and master's programmes
16.45	Consultation time committee

Tuesday 16 January

Time	Part
09.30 - 10.00	Preparation of the committee
10.00 - 10.45	Interview with lecturers bachelor's programme
10.45 - 11.00	Break
11.00 - 11.45	Development session 2: theme bachelor's programme
11.45 - 12.30	Lunch and consultation time committee
12.30 - 13.15	Interview with lecturers master's programmes
13.15 - 13.30	Break
13.30 - 14.15	Development session 2: theme master's programmes
14.15 - 14.30	Break
14.30 - 15.15	Final interview with programme managers
15.15 - 16.30	Drafting findings and preparing oral feedback
16.30 - 17.00	Oral feedback

Appendix 4. Materials

Prior to the site visit, the panel studied 15 theses per programme. Information on the theses is available from Academion upon request. The panel also studied other materials, which included:

- Organogram Graduate School of Life Sciences
- Governance and Educational Plan GSLS
- Dutch national domain-specific reference framework
- Learning outcomes GSLS
- GSLS Students' Site (online studyguide for all Master's students of the GSLS, including information about a.o. the curriculum, Life Sciences Academy, profiles, research project, writing assignment, courses, elective components, advice and counselling, graduation and career services)
- Advisory Board Meeting 2022
- Governance and Educational Plan GSLS
- Education and Examination Regulations GSLS 2023-2024
- Websites for prospective Master's students
- Master's programme-specific websites
- Osiris Course Catalogue UU
- UU website – Skills Lab
- UU website – Centre for Academic Teaching and Learning
- UMCU intranet – Teacher professionalization
- GSLS Teachers' Guide
- Overview of staff
- Annual Report GSLS 2021-2022
- Quality Assurance Plan GSLS
- Guides for students and supervisors
- Student surveys 2022-2023: writing assignment, research project and exit survey
- UU and UMCU vision on education
- Annual Report GSLS 2021-2022
- Education and Examination Regulations GSLS 2023-2024
- Rules and Regulations of the Board of Examiners GSLS 2023-2024
- Assessment Policy Plan GSLS
- Assessment matrices
- Rubrics GSLS
- GSLS Study duration survey 2023
- GSLS Alumni survey 2023
- Project revision curriculum
- National Student Survey
- Course material of 5 selected courses, covering the course overview, assessment and evaluation by students, and in one case the online learning environment
- Selected research project reports and assessment forms of 15 graduates per Master's programme
- Overview of graduates of 2020-2021 (Biomedical Sciences), 2020-2021 (Neuroscience and Cognition), and 2019-2021 (Health Sciences)
- Documents accreditation 2017-2018: Self-evaluation report Master Biomedical Sciences, Neuroscience and Cognition, Health Sciences 2017, QANU assessment report accreditation 2018 and Improvements after previous accreditation.