

Abstract white line art on a green and pink background. The top half features a green background with two white arcs. The bottom half features a pink background with a large, complex white line art shape that resembles a stylized 'A' or a ribbon.

MSc Medical Biology
Radboud University

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Contents

- Summary** 4
 - Score table 5
- Introduction** 6
 - Procedure..... 6
 - Panel 7
 - Information on the programme 8
- Description of the assessment** 9
 - Standard 1. Intended learning outcomes 9
 - Standard 2. Teaching-learning environment..... 9
 - Standard 3. Student assessment 14
 - Standard 4. Achieved learning outcomes 16
 - General conclusion 16
 - Development points 17
- Appendix 1. Intended learning outcomes** 18
- Appendix 2. Programme curriculum**..... 20
- Appendix 3. Programme of the site visit**..... 24
- Appendix 4. Materials**..... 25

Summary

Standard 1. Intended learning outcomes

The panel appreciates the profiles of the various specialisations of the MSc Medical Biology. It considers the research-oriented specialisations well-chosen, since they clearly match the RU's own research strengths. The panel is also pleased with the society-oriented specialisations SMI and SiS, which enhance the programme's scope for professional and applied orientations. The intended learning outcomes match the profile of all specialisations and are well-chosen and sufficiently concrete. They tie in with the Domain-specific Framework of Reference and reflect the Dublin descriptors for master's programmes as well as the academic level. The panel suggests including research integrity in the ILOs, in analogy with the BSc Biology.

Standard 2. Teaching-learning environment

The panel is pleased with the MSc Medical Biology curriculum, which it considers coherent, feasible and sufficiently flexible in all specialisations. The panel appreciates that the research specialisations match the RU research foci. This academic orientation is reinforced by the incorporation of two separate research internships. The panel also appreciates the two societally oriented SiS and SMI specialisations. It recommends strengthening the attention paid to statistics, big data and research integrity in the MSc curriculum. It also advises linking the philosophy courses to the various specialisations and limiting students' options in choosing them, so that they treat ethical questions and dilemmas they are likely to encounter in their own research practice. The panel considers this particularly important in the field of Medical Biology, where ethics and integrity are prominent topics.

The panel considers teaching methods to be sufficiently varied, although the programme could look into including more innovative methods. The panel specifically recommends introducing peer feedback in the internships (and possibly elsewhere in the programme) so that students learn from each other. The programme offers students plenty of support and worked hard to promote student well-being and limit study delays during covid-19. The panel learned that MSc Medical Biology students often struggle to find an internship position within Radboudumc, due to competition with other MSc students. It suggests further investing in the relations with not only the Radboudumc, but also with the MSc Biomedical Sciences, and looking into ways that the programmes can help and inspire one another.

The panel appreciates the MSc Portfolio, which offers study support and has been redeveloped to include career orientation. It recommends making sure that (aspiring) students receive uniform and sufficiently detailed information about the programme. The panel is pleased with staff quality in the MSc and noticed that students appreciate the dedication of the teaching and support staff. The panel recommends strengthening the support staff in the MSc and creating permanence here. The programme aims to consider including more PhD students in MSc teaching by granting them contract extension, which the panel appreciates, also to support staff members with a large teaching load. The panel finds facilities up to standard.

Standard 3. Student assessment

The panel considers the programme's assessment practices and the alignment of assessment with the intended learning outcomes up to standard. It understood from students and alumni that they are generally satisfied with the manner and variety of assessment. The panel finds that the internship assessment procedure is well-designed, but it considers the influence of the second, local internship supervisor on the grade a point of attention and discussion for the programme. It also advises ensuring that written feedback on the thesis is adequately given and stored.

From its interview with the examination board, the panel learnt that the board is mainly involved with *ex post* quality assurance, guaranteeing quality of assessment through routinely checking 10% of the final theses and 25% of the courses and course assessments each year. Quality advice *ex ante* is taken on by the

programme committee. The panel appreciates this method, which appears to be working well, and finds that the board adequately fulfils its tasks. The panel is also satisfied with quality assurance of the faculty-wide SiS and SMI specialisations, which falls under the responsibility of the Faculty of Science's four examination boards, depending on the MSc programme the various students are in. In this way, the specialisations are regularly evaluated in relation to the various programmes they are a part of.

Standard 4. Achieved learning outcomes

The panel concludes that the final theses of the MSc Medical Biology demonstrate the level and quality that may be expected. It was pleased to see the thesis topics demonstrate the breadth of the programme. The alumni of the programme look back on it with appreciation. They find employment in PhD positions in the Netherlands and abroad, as well as in industry, policy, the public sector, or business.

Score table

The panel assesses the programme as follows:

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

Ton Bisseling, chair

Fiona Schouten, secretary

Date: 24-1-2022

Introduction

Procedure

Assessment

On 23-24 September 2021, the Biology programmes of Radboud University were assessed by an independent peer review committee or panel as part of the cluster assessment Biology. The assessment cluster consisted of 21 programmes, offered by Utrecht University, Radboud University, the University of Groningen, Leiden University, the University of Amsterdam and Vrije Universiteit Amsterdam. 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 Biology cluster after taking over from Qanu per August 2021, when the first digital site visit to Utrecht University had already taken place. Els Schröder acted as coordinator for Qanu during the start-up phase and the site visit to Utrecht University. From then on, Fiona Schouten and Peter Hilderling acted as coordinators and secretaries in the cluster assessment, and Mariëlle Klerks acted as secretary. They have all been certified and registered by the NVAO. For Radboud University, Fiona Schouten acted as coordinator and secretary.

Preparation

Qanu composed the peer review committee in cooperation with the institutions and taking into account the expertise and independence of the members as well as consistency within the cluster. On 22 June 2021, the NVAO approved the composition of the panel. The coordinator instructed the panel chair on his role in the site visit.

The contact persons for Radboud University composed a site visit schedule in consultation with the Qanu coordinator (see appendix 3). They selected representative partners for the various interviews. It was determined that the development dialogue would take place after the site visit. A separate development report was made based on this dialogue.

The programmes provided the Qanu coordinator with a list of graduates over the period 2019-2020. In consultation with the coordinator, the panel chair selected 15 theses per programme. He took the diversity of final grades and examiners into account, as well as the various specialisations. 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 self-evaluation reports and additional materials (see appendix 4).

The panel members studied the information and sent their 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 self-evaluation reports 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 programme 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 publicly presented the preliminary findings.

Report

The secretary wrote a draft report based on the panel's findings and submitted it for peer assessment within Academion. Subsequently, the secretary sent the report to the panel for feedback. After processing this feedback, the secretary sent the draft report to the Radboud University Education Institute of Bioscience 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 finalised the report, and the coordinator sent it to Radboud University.

Panel

The following panel members were involved in the cluster assessment:

- Prof. dr. Ton Bisseling, professor Molecular Biology at Wageningen University & Research (chair);
- Em. prof. dr. Nico van Straalen, emeritus professor of Animal Ecology at Vrije Universiteit (vice-chair);
- Prof. dr. Aard Groen, professor of Entrepreneurship & Valorization at University of Groningen;
- Prof. dr. Menno Witter, Professor of Neuroscience at Norwegian University of Science and Technology;
- Prof. dr. Ellen Blaak, Professor of Human Biology at Maastricht University;
- Prof. dr. Roos Masereeuw, professor of Experimental Pharmacology at Utrecht University;
- Prof. dr. Sander Nieuwenhuis, professor Cognitive Psychology at Leiden University;
- Prof. dr. Maarten Frens, professor in Systems Physiology at Erasmus University Rotterdam;
- Prof. dr. ir. Jan Kammenga, professor of Functional Genetics at Wageningen University & Research
- Prof. dr. Dennis Claessen, professor Molecular Microbiology at Leiden University;
- Prof. dr. Isa Schön, team leader at the Royal Belgian Institute of Natural Sciences;
- Prof. dr. Hauke Smidt, professor Microbial Ecology at Wageningen University & Research
- Dr. ir. Frank van der Wilk, executive director Netherlands Commission on Genetic Modification;
- Dr. Mariken de Krom, head team Education and Research (Brain Division) at UMC Utrecht;
- Dr. Mieke Latijnhouwers, assessment expert at Education Support Office of Wageningen University & Research;
- Dr. Eric Schouwenberg, head of department Nature and Biodiversity at Arcadis;
- Dr. Peter Korsten, researcher and lecturer in Evolutionary Biology at Bielefeld University;
- Dr. Éva Kalmár, researcher and lecturer in Science Communication at Delft University of Technology;
- Dr. Mark Bos, researcher and lecturer in Science Communication at Utrecht University;
- Drs. Bas Reichert, founder and CEO of BaseClear (microbial genomics);
- Jelle Keijzer BSc, master student Molecular Cellular Life Sciences at Utrecht University (student member);
- Ishara Merhai, bachelor student Biology at University of Amsterdam (student member).

The panel assessing the MSc Medical Biology at Radboud University consisted of the following members:

- Prof. dr. Ton Bisseling, professor Molecular Biology at Wageningen University & Research (chair);
- Em. prof. dr. Nico van Straalen, emeritus professor of Animal Ecology at Vrije Universiteit (vice-chair);
- Prof. dr. ir. Jan Kammenga, professor of Functional Genetics at Wageningen University & Research
- Dr. ir. Frank van der Wilk, executive director Netherlands Commission on Genetic Modification;
- Dr. Mariken de Krom, head team Education and Research (Brain Division) at UMC Utrecht;
- Prof. dr. Hauke Smidt, professor Microbial Ecology at Wageningen University & Research (referent);
- Ishara Merhai, bachelor student Biology at University of Amsterdam (student member).

Due to personal circumstances, Prof. dr. Hauke Smidt was unable to attend the site visit and acted as referent.

Information on the programme

Name of the institution:	Radboud University
Status of the institution:	Publicly funded institution
Result institutional quality assurance assessment:	Positive
Programme name:	Medical Biology
CROHO number:	60610
Level:	Master
Orientation:	Academic
Number of credits:	120 EC
Specialisations or tracks:	Human Biology Medical Epigenomics Neurobiology Science in Society Science, Management and Innovation <i>Science and Education (assessed in cluster assessment Universitaire Lerarenopleidingen)</i>
Location:	Nijmegen
Special features:	-
Mode(s) of study:	Full-time
Language of instruction:	English
Submission date NVAO:	1 May 2022

Description of the assessment

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 MSc Medical Biology is organised by the Faculty of Science at Radboud University (RU). It is an English-language master's programme containing three general research specialisations: Human Biology, Medical Epigenomics, and Neurobiology, as well as two societal specialisations: Science in Society (SiS) and Science, Management and Innovation (SMI). The programme also has a specialisation on science education which is not part of this assessment, as it was dealt with in the academic teacher training programme assessment. For SiS and SMI, students start out in one of the research specialisations (or a "free" research specialisation) in the first year, moving on to a dedicated SiS or SMI programme in their second year.

The panel appreciates the profiles of the various master's specialisations. It considers the research-oriented specialisations well-chosen, since they clearly match the RU's and Radboudumc's own research strengths. Neurobiology and Medical Epigenomics are the more specialised specialisations, while Human Biology allows for a broader influx from the BSc, which the panel appreciates. The panel is also pleased with the society-oriented specialisations, which enhance the programme's professional and applied orientation.

The programme has a set of general intended learning outcomes (ILOs) it shares with the MSc Biology. In addition, it has 3 ILOs for the research-oriented specialisations and separate ILOs for the SiS and SMI specialisations. The panel studied the ILOs and concluded that they tie in with the Domain-specific Framework of Reference (26 June 2020). It considers the ILOs to be well-chosen, detailed and sufficiently concrete. The panel did notice that the ILOs don't mention research integrity, which do get mentioned in the intended learning outcomes of the BSc Biology. It suggests including this aspect in the MSc Medical Biology ILOs as well, since this aspect is of equal or even higher importance in this programme than in the BSc.

Considerations

The panel appreciates the profiles of the various specialisations of the MSc Medical Biology. It considers the research-oriented specialisations well-chosen, since they clearly match the RU's and Radboudumc's own research strengths. The panel is also pleased with the society-oriented specialisations SMI and SiS, which enhance the programme's scope for professional and applied orientations. The intended learning outcomes match the profile of all specialisations and are well-chosen and sufficiently concrete. They tie in with the Domain-specific Framework of Reference and reflect the Dublin descriptors for master's programmes as well as the academic level. The panel suggests including research integrity in the ILOs, in analogy with the BSc Biology.

Conclusion

The panel concludes that the programme meets 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 MSc Medical Biology's three general research specialisations, Human Biology, Medical Epigenomics, and Neurobiology, consist of mandatory courses (15 EC), electives/free space (18 EC), two research internships (36 EC each, one in every year), a Review Article (6 EC), a Research Proposal (6EC), a 3 EC philosophy course and an MSc portfolio (0 EC). In the two faculty-wide societal specialisations Science in Society (SiS) and Science, Management and Innovation (SMI) students follow the first year in a research specialisation (or compose a 'free' research specialisation). In the second year they follow a dedicated SiS or SMI programme. In SMI, they follow 15 EC compulsory courses, 15 EC theme courses, and a Research Project (27-30 EC). In SiS, they follow compulsory courses (24 EC), an elective (3 EC) related to the subject of the research project, a free elective (3 EC) and the Research Project (30 EC). An overview of the curricula of all specialisations can be found in appendix 2.

The panel studied the curricula of the various research-oriented specialisations and concludes that their build-up is clear and well-structured. The content of the specialisations is well-chosen and matches their profile, preparing students clearly for a career in research. Students are offered ample space to pursue their own research interests within a coherent curriculum. The panel appreciates that the research specialisations match the RU and Radboudumc research foci, giving them a strong and direct connection with ongoing research and allowing staff members to connect education to research. This academic orientation is reinforced by the incorporation of two separate research internships: one in every year of the programme. In these internships, students conduct wet lab or field experiments and/or (computational) data-analyses at a department of the RU or an external research group, specifically the Radboudumc. The findings of the internship are presented in a written report and oral presentation. The curriculum also includes the writing of a research proposal, for instance for a PhD project, and a review article.

The two specialisations not primarily focused on research, SiS and SMI, complement the master's programme as valuable links to society and the professional world outside academia. The SiS specialisation is organised by the Institute for Science in Society (ISIS) research institute as part of the RU Faculty of Science. The institute focuses on research and education at the interface of science, technology and society. In the SiS track, the focus is on science communication and the link with the non-academic world. SMI focuses on business and policy questions concerning the themes of Health, Climate & Energy, Industries & Green IT, and Biodiversity. SMI is also embedded in the Faculty of Science and has four coordinators, one per theme.

In SiS and SMI, students complete the first-year disciplinary research internship, but end the second year with an individual research project (SiS) or a research project within a company, an NGO, or the strategy department of a company research lab, either inside or outside the Netherlands or Europe (SMI). The panel highly appreciates these specialisations and learned from students and alumni that they are enthusiastic about these options. Since the two specialisations are shared with the other master's programmes in the Faculty of Science, students encounter peers with different backgrounds and approaches, which they consider enriching and useful given the focus of the society-oriented specialisations.

The panel formulated some points of attention and improvement for the MSc Medical Biology. It learned that certain skills, particularly statistics, are acquired primarily in the research internships. This means that the choice of internship greatly determines the level of statistics acquired. Alumni told the panel that they consider the statistics skills they learned adequate, but basic. They would have liked this element to be more prominent in the curriculum and better geared towards advanced applications (e.g. multivariate statistics). It would have made them feel more confident entering the internships. The panel therefore recommends strengthening advanced statistics in the courses.

Another way to improve the programme would be to pay more attention to big data, which is a theme gaining importance. The panel also suggests including data integrity and research integrity more

prominently in the curriculum. According to the panel, the societal implications of research and the way data is stored and handled are important aspects of a research-oriented programme. It considers this especially important in an MSc in the field of Medical Biology, where data and research integrity and their societal implications are prominent topics. The panel learned from its conversations with students, alumni and staff that these themes are touched upon repeatedly in the various courses and internships, but that they are not always problematised or placed in the foreground. Therefore, the panel recommends addressing them explicitly in the curriculum. It also advises including research integrity and data handling on the internship rubrics to ensure all students address these topics.

Finally, the panel noticed that ethics is most explicitly and structurally addressed in the 3 EC philosophy course. Students pick one out of twelve courses. The panel noticed that these are not programme-specific and that some, such as 'Science and Arts' or 'Physics and Philosophy', are not likely to deal with specific ethical issues students frequently encounter in their internships or future careers. Students and alumni expressed mixed feelings about these courses, which they enjoyed but did not always consider fully relevant. The panel considers this a missed opportunity in a field where ethical questions are so prominent. It recommends strengthening ethics and increasing the relevance of the philosophy course by linking the philosophy courses to the various specialisations and limiting the students' options when choosing one.

Teaching methods and corona impact

The teaching methods within the programme are sufficiently varied, from presentations and internship to writing a research proposal. In SiS, students write an academic essay or a stakeholder participation plan, and they can opt for an excursion. In SMI, students do tests, group assignments, peer review and interviews. The MSc benefits from the international classroom due to international student influx and uses the varied backgrounds to stimulate in-class exchanges and discussions. While in the BSc Biology, Team-Based Learning is introduced throughout the curriculum, this is not (yet) the case in the MSc courses. The panel recommends investigating carefully if this method is also suitable for the master's programme and looking into other innovative teaching method for the master's programme, and it especially recommends introducing peer feedback as a method in the internships and possibly also in the writing of a review article and/or the research proposal. Through peer feedback, students learn from each other's experiences, which is especially desirable since many of the intended learning outcomes are addressed in the internships. It also trains students' feedback skills and possibly contributes to lessening the workload of the teaching staff.

The corona pandemic clearly impacted the courses and the teaching methods. During the lockdowns, the programme managed to facilitate essential lab skills teaching onsite; various experiments were converted to digital modules. Lectures and work groups were taught via Zoom or Brightspace or recorded. The programme was run without needing to alter the course objectives. The panel applauds the programme for achieving this. It learnt that the prominence of digital teaching methods has contributed lastingly to teaching and learning quality in the programme. As an opportunity for future development, the panel suggests considering retaining elements that work well, such as recorded lectures. It also suggests using this impulse to further enrich teaching in the programme with additional innovative methods, such as flipping the classroom.

During COVID-19, continuation of internships turned out to be the most challenging. Students had difficulty finding internship positions as the occupancy of labs was restricted by the COVID-19 regulations. Many internships were converted to (mostly) data-analysis projects that could be done from home, but some students preferring lab work incurred minor delays. The panel considers the internships an important element of the programme and is pleased that such solutions were found.

Student guidance and feasibility

The various specialisations have entry requirements in place and select incoming students based on prior education. Premaster programmes are offered to those from other backgrounds who want to enter. The

panel is pleased with the admissions and orientation procedures, which ensure that the students entering can follow the programme and find their way.

The MSc programme offers students room to make their own choices and design their own learning paths. The Master Portfolio Biosciences supports them in doing so. The MSc coordinator recently undertook a revision of the portfolio to include not only a focus on study progress and planning, but also on students' future career paths. Students are now required to regularly visit companies and career events and reflect on them. All students are assigned an individual portfolio mentor.

The panel appreciates the portfolio and supports the adaptation towards career orientation. It learnt from students and alumni that its added value depends strongly on the mentor and advises to expand the current BSc pilot where mentors are replaced by trained coaches to the MSc. The inclusion of the career orientation aspects has given the portfolio a new urgency and relevance for students. The new form also addresses a need felt by students and alumni as well as by programme management to create more room for career orientation. The panel learnt that this was previously felt to be lacking: an optional, faculty-wide course available was not known to all students and not specifically focused on the MSc Medical Biology. As a result, and due to the research orientation of most MSc specialisations, students were not clear on options beyond a PhD. The panel expects the new portfolio to remedy this and recommends sharpening and improving the profile of the career orientation course.

MSc students are supported by teaching staff, programme and internship coordinators, study advisors, their portfolio mentor, and internship supervisors. The students and alumni interviewed by the panel praised the good atmosphere among staff and students, the dedication of the teaching and supporting staff, and the help they got when struggling with personal problems or choices, especially during the corona period. During the lockdowns, study advisors experimented with online coaching sessions, which turned out to make them even more approachable for students and which the panel suggests could be continued further. Students were also offered mental support and aid, and where possible, informal meetings at distance were organised. The programme worked hard to find alternatives for internships and projects during covid-19, to avoid study delays as much as possible.

The students experience the internship procedure as clear and well-designed. It has recently been streamlined and made uniform for all students and specialisations. At the start of an internship, students write a 1-page internship proposal according to a general format which from 2021-2022 onwards is reviewed by the internship coordinator. In addition, the entire procedure now runs via a digital platform (SPIB) where the proposal, final thesis and evaluations by first and second examiner are stored. In the case of external internships, students feel adequately helped and supported by RU staff members and supervisors. All in all, the students of the programme feel well guided and supported. They consider the programme challenging, yet feasible.

Students in the specialisation Human Biology often want at least one of their internships to take place within the Radboudumc. They frequently encounter difficulties finding an internship position there. This is partly caused by the fact that they have to compete with students from other programmes that are more closely linked to the Radboudumc, most notably the MSc Biomedical Sciences. The panel learned that students who apply on time for such positions can get accepted, and that the RU staff members of Medical Biology do their best to get students placed and scheduling issues resolved. Nevertheless, there is much room for improvement here: students can suffer great study delays waiting for a placement, or are forced to opt for other internships outside of the Radboudumc. According to the panel, measures need to be taken to improve this situation. The panel suggests investing further in the relations with not only the Radboudumc but also with the MSc Biomedical Sciences.

Students receive their information in various places, most notably through the online course guide and Brightspace. The panel found this documentation accessible and well-designed, but it noticed that both the course titles and the course contents are often formulated in very general terms. Course descriptions frequently don't include the learning objectives or references to the intended learning outcomes. The panel also found some discrepancies between various information sources. The panel advises the programme to make improvements here and provide clear, uniform and sufficiently detailed information about the programme to (aspiring) students.

Language of instruction

All specialisations of the MSc programme are taught in English. The panel considers this (including the English-language programme title) an apt choice in light of the research and professional fields the specialisations prepare for. Additional benefits are the international classroom and the programme's opportunity to include international research talent among the teaching staff. The panel learned from its interviews with staff and students that the English level among participants (students as well as teachers) clearly suffices for the programme.

Teaching staff and facilities

The panel finds that the teaching staff is clearly equipped to teach the programme. Staff members are usually actively involved in research. They are also didactically skilled: teaching staff is required to have a basic teaching qualification and some hold a senior qualification. There is a well-functioning system in place to help staff members further professionalise (Radboud Teaching and Learning Centre). Students praise the dedication of the teaching staff and appreciate the in-house internships, that allow them to become an active part of a research group. In SiS, students are invited to ISIS lunch colloquia where research of the staff is presented.

The number of staff is mentioned as a point of attention in the documentation the panel received. In discussing this matter with all stakeholders, including students and alumni, the panel concluded that this is indeed the case. Staff members experience a high workload. This is particularly the case with teaching staff who combine teaching in the MSc (Medical) Biology with teaching in Radboudumc: the course schedules don't match, which can create practical and administrative difficulties. Whereas the BSc Biology programme has been able to use temporary corona funding to expand the educational support significantly, the assistance of Edusupport is less in the MSc courses. The panel recommends providing more (permanent) support by non-academic support staff to allow teaching staff to focus on their core activities by unburdening them from administrative tasks. Support staff could also implement and coordinate overarching elements. The appointment of an internship coordinator has been a positive first step in this direction. The programme aims to include more PhD students in MSc teaching by offering them an extension for teaching, and supports staff members with a large teaching load by allowing them a PhD student (paid by RU) to support them both in education and in research. It applauds this practice and urges its continuation, as well as that of the positions of non-academic teaching assistants.

The panel considers teaching facilities (labs, classrooms etc.) adequate for current student numbers in the MSc. Although the programme struggled to find lab space for all internship candidates during the lockdowns, the panel is pleased to see that solutions were found.

Considerations

The panel is pleased with the MSc Medical Biology curriculum, which it considers coherent, feasible and sufficiently flexible in all specialisations. The panel appreciates that the research specialisations match the RU and Radboudumc research foci. This academic orientation is reinforced by the incorporation of two separate research internships. The panel also appreciates the two societally oriented SiS and SMI specialisations. It recommends strengthening the attention paid to statistics, big data and research integrity in the MSc curriculum. It also advises linking the philosophy courses to the various specialisations and

limiting students' options in choosing them, so that they treat ethical questions and dilemmas they are likely to encounter in their own research practice. The panel considers this particularly important in the field of Medical Biology, where ethics and integrity are prominent topics.

The panel considers teaching methods to be sufficiently varied, although the programme could look into including more innovative methods. The panel specifically recommends introducing peer feedback in the internships (and possibly elsewhere in the programme) so that students learn from each other. The programme offers students plenty of support and worked hard to promote student well-being and limit study delays during covid-19. The panel learned that MSc Medical Biology students often struggle to find an internship position within Radboudumc, due to competition with other MSc students. It suggests further investing in the relations with not only the Radboudumc but also with the MSc Biomedical Sciences, and looking into ways that the programmes can help and inspire one another.

The panel appreciates the MSc Portfolio, which offers study support and has been redeveloped to include career orientation. It recommends making sure that (aspiring) students receive uniform and sufficiently detailed information about the programme. The panel is pleased with staff quality in the MSc and noticed that students appreciate the dedication of the teaching and support staff. The panel recommends strengthening the support staff in the MSc and creating permanence here. The programme aims to consider including more PhD students in MSc teaching by granting them contract extension, which the panel appreciates, also to support staff members with a large teaching load. The panel finds facilities up to standard.

Conclusion

The panel concludes that the programme meets standard 2.

Standard 3. Student assessment

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

Findings

Student assessment in the MSc Medical Biology, including the SiS and SMI specialisations, takes place according to faculty and university policies and regulations. This includes the use of rubrics and test matrices, and of formative as well as summative assessment. Students are offered clear and timely information on the tests they are taking. Assessment is varied and matches the learning outcomes of the courses and the intended learning outcomes. The panel is positive about assessment types such as the review article and the research proposal. The programme makes use of the online assessment environment Cirrus, which allows easy and transparent access to and analysis of the results after the test. Lecturers get support from the faculty-wide digital assessment team for working with Cirrus. The panel considers the programme's assessment practices up to standard. It understood from students and alumni that they are generally satisfied with the manner and variety of assessment.

The assessment of the 0 EC MSc Portfolio is done by the student's portfolio mentor. Students don't receive a grade, but must have completed it in order to finalise it and be allowed to graduate. As mentioned in standard 2, the recent development of the portfolio towards career orientation has caused students and mentors to appreciate its added value more. The panel still understood from students and alumni that the role and motivation of the mentor impact the quality of assessment here. It recommends looking into ways to optimize portfolio assessment.

Internships and final projects

In the MSc, students perform two internships. Students participating in one of the three research specialisations need to do at least one internship under supervision of an examiner from a list of specified

departments. Both projects consist of an internship (55% of the final grade), thesis (35%) and oral presentation (10%). At the start of the internship, the student submits an internship plan, which is evaluated (go/no go) by the MSc internship coordinator. The student is supervised during the internship by a daily supervisor/first examiner. In cases where the daily supervisor is not a RU-approved examiner, a RU examiner is added. Midway through the internship, students receive formative feedback during a midterm review with the first examiner; the final assessment by the first examiner is done according to the same procedure. Students are also required to present their findings in at least one oral presentation, usually during a work-meeting at the department where the research was done, which is assessed by the first examiner. If the presentation is graded below 5.0, a second presentation is compulsory. For the thesis, a second RU-approved examiner is involved in the assessment, who fills out a separate assessment form. The thesis grade is determined in consultation between the two readers. If the grade of the first and second evaluator deviate more than one point and they cannot reach a consensus, the examination board appoints a third examiner.

The panel finds that the internship assessment procedure is well-designed. It looked at a selection of theses and the accompanying assessment forms and noticed that many students do their second and final internship outside the RU or Radboudumc. In many of these cases, the panel found that while the RU or Radboudumc examiner is responsible, the external supervisor often has a strong or even decisive voice in determining the assessment of the internship. This can lead to higher final grades than warranted by the quality of the work and is therefore a point of attention and discussion for the programme. The panel also found that the assessment forms lack written feedback. The panel learnt that this is due in many cases to a shortcoming of the digital platform used, which does not permit examiners to send the assessment forms to their students. Examiners therefore choose other, informal ways to give feedback to students and don't always dedicate sufficient time and attention to the form that is stored. The panel advises ensuring written feedback is adequately stored and shared with students. This contributes to a professional and transparent assessment and makes sure all students will actually have that feedback. It learned that the examination board has raised this issue with the programme management, and supports the board in this.

Examination board

The examination board consists of seven members and a secretary, who fulfil their legal task of guaranteeing quality of assessment through checking 10% of the final theses and 25% of the courses and course assessments each year, and advising programme management and examiners on the outcomes. In order to achieve this, the board has divided tasks: there is a daily board as well as an assessment committee, which looks at the courses. The board was also involved when assessment in the programme was adapted to the corona situation. The panel learned from its interview with the board that it sees itself as primarily responsible for *ex post* quality assurance and control. The panel also learned that the programme committee takes on much of the *ex ante* quality advice, checking in with the examination board when necessary. The panel learned that all involved are satisfied with this approach, which appears to be working well. It finds that the examination board adequately fulfils its tasks.

The panel is also satisfied with quality assurance of the faculty-wide SiS and SMI specialisations, which falls under the responsibility of the Faculty of Science's four examinations boards, depending on the MSc programme the various students are in. In this way, the specialisations are regularly evaluated in relation to the various programmes they are a part of: the boards include SiS and SMI in their regular checks on theses and courses. The boards of examiners are in frequent contact. They align procedures and share the same secretary. If any issues or doubts should arise, they can refer to the SMI or SiS coordinators as first points of contact.

Considerations

The panel considers the programme's assessment practices and the alignment of assessment with the intended learning outcomes up to standard. It understood from students and alumni that they are generally satisfied with the manner and variety of assessment. The panel finds that the internship assessment

procedure is well-designed, but it considers the influence of the second, local internship supervisor on the grade a point of attention and discussion for the programme. It also advises ensuring that written feedback on the thesis is adequately given and stored.

From its interview with the examination board, the panel learnt that the board is mainly involved with *ex post* quality assurance, guaranteeing quality of assessment through routinely checking 10% of the final theses and 25% of the courses and course assessments each year. Quality advice *ex ante* is taken on by the programme committee. The panel appreciates this method, which appears to be working well, and finds that the board adequately fulfils its tasks. The panel is also satisfied with quality assurance of the faculty-wide SiS and SMI specialisations, which falls under the responsibility of the Faculty of Science's four examination boards, depending on the MSc programme the various students are in. In this way, the specialisations are regularly evaluated in relation to the various programmes they are a part of.

Conclusion

The panel concludes that the programme meets standard 3.

Standard 4. Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

The panel looked at a selection of 15 final theses of the MSc programme representing the various specialisations (see appendix 4). It concluded that all of these demonstrate the level and quality that may be expected from a MSc thesis in Medical Biology. The panel was pleased to see that the theses cover a wide range of topics, demonstrating the full breadth of the programme and its specialisations. It noticed that the SiS and SMI theses clearly reflect the societal profile while meeting MSc standards, which it appreciates.

Alumni from the programme mentioned to the panel that they stand out internationally through their research experience. According to the panel, this testifies to the importance of the two internships in the programme. While many alumni find PhD positions in the Netherlands and abroad, a considerable number also find employment in industry, policy, or business. SiS alumni find employment in intermediary organisations between science and society (policy, advisory bodies, interest groups and governments), in science communication or interdisciplinary research and in science journalism. SMI alumni end up working in companies but also in non-profit organisations and the public sector. On the whole, the alumni feel the programme prepared them well for their careers.

Considerations

The panel concludes that the final theses of the MSc Medical Biology demonstrate the level and quality that may be expected. It was pleased to see the thesis topics demonstrate the breadth of the programme. The alumni of the programme look back on it with appreciation. They find employment in PhD positions in the Netherlands and abroad, as well as in industry, policy, the public sector, or business.

Conclusion

The panel concludes that the programme meets standard 4.

General conclusion

The panel's assessment of the MSc Medical Biology is positive.

Development points

1. Include research integrity in the intended learning outcomes of all MSc specialisations.
2. Increase attention paid to advanced statistics, big data, ethics and research integrity throughout the curriculum, and match the philosophy courses with the specialisations so that students encounter ethical dilemmas they are likely to be confronted with in their research and professional career.
3. Invest in the relations with the Radboudumc and the MSc Biomedical Sciences to facilitate internship positions, and look into ways that the two programmes can help and inspire one another.
4. Adapt portfolio mentoring along the lines of the BSc pilot, introducing trained coaches.
5. Invest in (permanent) support staff to reduce work pressure.
6. Re-evaluate the influence of external internship supervisors on the final grade in day-to-day practice.
7. Ensure that written feedback on the thesis is well archived and that all students get this feedback.

Appendix 1. Intended learning outcomes

The Master's programme in (Medical) Biology has the following general learning outcomes for students:

- Acquire knowledge, skills and insights in the relevant field of study.
- Develop academic competences.
- Prepare for a future career.
- Strengthen qualifications in the area of independent academic research.
- With regard to the specialisation Science, Management and Innovation, acquire knowledge, insight and skills in relevant areas of business administration, policy sciences and social beta themes.
- With regard to the specialisation Science in Society, acquire knowledge, insight and skill in relevant areas of media, knowledge transfer and social interaction.
- With regard to the specialisation Science and Education, acquire additional teaching competences.

In addition to the general learning outcomes described above, the Master's programme in Medical Biology trains students to achieve the following learning outcomes upon graduation:

1. Capable, based on broad and up-to-date knowledge of biological and/or biomedical processes, in combination with specialist knowledge (theories, methods, techniques) and research experience in at least one sub-area of this field, of setting up and conducting research aimed at acquiring new knowledge and insight in this research area
2. Capable of formulating new questions and hypotheses in the biological/ biomedical field, and familiar with the research methods and state-of-the-art techniques to solve these, taking into account available equipment and resources
3. Capable of setting up and conducting scientific experiments in an independent manner, including the required controls, of using models and theories to explain the results, and of evaluating the results in terms of well-founded scientific conclusions
4. Capable of independently identifying, critically reading and comprehending relevant, up-to-date international literature from different disciplines, of discriminating essential from non-essential information, and of integrating new information in their overall view on nature
5. Capable of using concepts from different organization levels in biology, in combination with those from physics, chemistry and mathematics, to solve a complex biological/biomedical problem at a specific abstraction level
6. Capable of presenting the results of a research project in written form, in accordance with the standards of an academic article
7. Capable of independent professional practice whereby, depending on the chosen variant, the emphasis is put on conducting fundamental scientific research (under supervision), or on transferring or applying existing scientific knowledge, thereby taking into account the student's own competences
8. Capable of asking adequate questions with a critical and constructive attitude towards analysis and resolving of complex biological and/or biomedical problems
9. Capable of defending his view and of critically evaluating other views in a scientific discussion
10. Capable of presenting and discussing the results of a research project in the form of an oral presentation for experts and colleague students
11. Capable of working in or leading a project team, including the making of plans, the distribution of tasks, the integration of sub-projects and the joint evaluation of results
12. Capable of integrating ethical aspects in his professional practice, along with the ability to reflect on the potential implications for society
13. Capable, through self-reflection and discussion with others, of assessing their own performance and possibilities on the labour market.

Research specialisations specific outcomes:

- a. Capable, based on broad and deepened knowledge of the specialisation topic and research experience in at least two distinct sub-areas of biological/biomedical sciences, of setting up and performing scientific research in an independent manner.
- b. Capable of presenting the results of a research project in written form, in accordance with the specific format of a scientific journal.
- c. Capable of writing a research proposal according to the criteria of external scientific organizations.

SMI specialisation specific outcomes:

- a. Capable of bridging between their own science discipline and other disciplines, based on profound understanding of the chosen core theme and how this relates to societal, political, economic, and environmental requirements of today's world.
- b. Familiar with and capable of analysing specific problems within their theme, and able to apply a range of approaches to address these, argue for, select, and implement feasible options, taking into account the full width of technological, societal, political and economic perspectives.
- c. Proficient in using research methods and techniques, including basic finance and economics, to verify, justify and substantiate strategies and plans, and capable of effectively using a wide variety of information and communication channels.
- d. Capable of balancing perspectives and interests in specific contexts within a company or (non)governmental organisation in order to formulate appropriate strategies and plans towards implementation of the Sustainable Development Goals (SDGs).
- e. Capable of communicating insights, views and analyses of complex issues to others in a clear, concise and understandable manner, both in written and spoken form.
- f. Capable of working in multidisciplinary and multicultural high-performance teams based on sound division of tasks, knowledge, competencies, and responsibilities, whilst respecting diverging views and opinions.

SiS specialisation specific outcomes:

- a. Capable of analysing the role of scientific expertise in societal and political decision making with regard to socio-scientific issues
- b. Capable of designing and conducting independent and methodologically sound social research at the interface of science and society and capable of contributing to academic research
- c. Capable of understanding and designing public and stakeholder participation processes in research and innovation
- d. Capable of analysing, improving and evaluating interdisciplinary collaborations with multiple stakeholders, integrating different perceptions, interests and types of knowledge (experiential, professional and scientific)
- e. Capable of substantiating and communicating the relevance of one's scientific discipline in society

Appendix 2. Programme curriculum

Human Biology

15 EC mandatory courses:

NWI-BM078 Molecular Therapy (6 EC)

NWI-BM072 Translational Genomics (6 EC)

NWI-BM073 Trends in Stem Cell Biology (3 EC)

6 EC Review Article (NWI-BM-REVIEWART)

6 EC Research Proposal (NWI-BM-RESPROP)

Either Review article or Research proposal can be replaced by either Field Course Alpine Ecology (NWI-BM040B) or by Field Course Ireland (NWI-BM048B)

(NB: both field courses are offered in alternating years)

2 internships, 72 EC in total:

NWI-BM-STAGE1 (1x 36EC)

NWI-BM-STAGE2 (1x 36EC)

15 EC Limited choice electives

12 EC natural science courses or extension of one internship (6 EC max.):

Choose at least one course from the EER (<https://www.ru.nl/courseguides/science/rules-requests/education-regulations>). The remaining EC should be filled with academic courses within the field of natural sciences.

3 EC Philosophy course:

NWI-FFIL202A Evolution and the Mind

NWI-FFIL203B Bio-ethics for Life Scientists

NWI-FFIL209B Environmental Ethics

NWI-FFIL211B Physics and Philosophy

NWI-FFIL212 Philosophy of Water Management

NWI-FFIL215 Upgrading the Human

NWI-FFIL216 Imagining the Anthropocene

NWI-FFIL217 Science and Arts

NWI-FFIL218 Science and Values

NWI-FFIL219 Philosophy of Neuroscience

NWI-FFIL300C Philosophy of Mathematical Practice

NWI-FFIL302 Philosophy & Ethics Microbiology

6 EC Free electives

0 EC NWI-BM054B Master Portfolio Biosciences

Medical Epigenomics

15 EC mandatory courses:

NWI-BM084 Integrative Omics in Health and Disease (6 EC)

NWI-BM073 Trends in Stem Cell Biology (3 EC)

NWI-BM066A Computation for Biologists (6 EC)

6 EC Review Article (NWI-BM-REVIEWART)

6 EC Research Proposal (NWI-BM-RESPROP)

Either Review article or Research proposal can be replaced by either Field Course Alpine Ecology (NWI-BM040B) or by Field Course Ireland (NWI-BM048B)

(NB: both field courses are offered in alternating years)

2 internships, 72 EC in total:

NWI-BM-STAGE1 (1x 36EC)

NWI-BM-STAGE2 (1x 36EC)

15 EC Limited choice electives

12 EC natural science courses or extension of one internship (6 EC max.)

Choose at least one course from the EER (<https://www.ru.nl/courseguides/science/rules-requests/education-regulations>). The remaining EC should be filled with academic courses within the field of natural sciences.

3 EC Philosophy course

6 EC Free electives

0 EC NWI-BM054B Master Portfolio Biosciences

Neurobiology

15 EC mandatory courses:

NWI-BM073 Trends in Stem Cell Biology (3 EC)

NWI-BM085 Behavioural and Systems Neuroscience (6 EC)

NWI-BM001D Molecular and cellular Neurobiology (6 EC)

NWI-NM103B Methods in Neuroscience (3 EC)

6 EC Systematic Review (NWI-BM059)*

*within Neurobiology the Review Article (NWI-BM-REVIEWART) is replaced by NWI-BM059

6 EC Research Proposal (NWI-BM-RESPROP)

Either Review article or Research proposal can be replaced by either Field Course Alpine Ecology (NWI-BM040B) or by Field Course Ireland (NWI-BM048B)

(NB: both field courses are offered in alternating years)

2 internships, 72 EC in total:

NWI-BM-STAGE1 (1x 36EC)

NWI-BM-STAGE2 (1x 36EC)

15 EC Limited choice electives

12 EC natural science courses or extension of one internship (6 EC max.)

Choose at least one course from the EER (<https://www.ru.nl/courseguides/science/rules-requests/education-regulations>). The remaining EC should be filled with academic courses within the field of natural sciences.

3 EC Philosophy course

6 EC Free electives

0 EC NWI-BM054B Master Portfolio Biosciences

Science, Management and Innovation

Year 1

a. Courses in Biology (15 EC)

You have to follow a set of courses that match the compulsory courses for one of the thematic specialisations:

Human Biology

Medical Epigenomics

Neurobiology (choose 15 of the 24 EC)

b. Science internship: NWI-BM-STAGES1 (33EC)

c. Review article - NWI-BM-REVIEWART (6 EC)

Review article can be replaced by Field Course Alpine Ecology (NWI-BM040B)

OR Field Course Ireland (NWI-BM048B)

(NB: both field courses are offered in alternating years)

d. Master Portfolio Biosciences (0 EC)

e. Philosophy course (3 EC)

f. Free elective (3 EC)

Year 2

Compulsory Courses (15 EC)

NWI-FMT003E Sustainable Innovation Management (6 EC), Q1

NWI-FMT030 Reaching the Sustainable Development Goals (6EC), Q1 + Q2

NWI-FMT019 Methods in Societal Research (3EC) Q2

Theme courses (15 EC)

You have to choose one of these themes:

Health

Energy & Climate

Industries & IT

Biodiversity.

Each theme contains 15 EC of courses. See the courses per theme in the table below.

Energy and Climate	Health
NWI-FMT022 Energy and Climate (6 EC)	NWI-FMT023 The Future of Health (6 EC)
NWI-FMT026 Energy Modelling (3 EC)	NWI-FMT029 How Health Systems Work (6 EC)
NWI-FMT032 Environmental Life Cycle Assessment (6 EC)	Free elective (3EC)
Industries & IT	Biodiversity
NWI-FMT022 Energy & Climate (6EC)	NWI-BM038A Ecological and Environmental Concepts* (3EC)
NWI-FMT032 Environmental Life Cycle Assessment (6EC)	NWI-FMT032 Environmental Life Cycle Assessment (6EC)
NWI-SM299 Pattern Recognition in the Natural Science (3EC)	NWI-BM075 Biodiversity Assessment* (3EC)
	NWI-BM033F Nature in a Crowded Country (3EC)

* Students who follow the Master Biology, specialisation Water and Environment choose NWI-BM060C Quantitative Conservation Ecology instead.

Research Project (27-30 EC)

Science In Society (SIS)

Year 1

a. Courses in Biology (15 EC)

You have to follow a set of courses that match the compulsory courses for one of the thematic specialisations:

Human Biology

Medical Epigenomics

Neurobiology (choose 15 of the 24 EC)

b. Science internship: NWI-BM-STAGES1 (33EC)

c. Review article - NWI-BM-REVIEWART (6 EC)

d. Master Portfolio Biosciences (0 EC)

e. Philosophy course (3 EC)

f. Free elective (3 EC)

Year 2

Planning of SiS-courses and research project

Q1	Q2
NWI-FC0013C Science and Media (3 EC)	NWI-FC0010D Framing Knowledge (6 EC)
NWI-FC002B Science and Societal Interaction (3 EC)	NWI-FC0044C Methods of Societal Research: Science in Society (6 EC) Q1 + Q2
NWI-FC0044C Methods of Societal Research: Science in Society (6 EC) Q1 + Q2	
NWI-FC0043B Science and Public Policy (3 EC)	
NWI-FC003B Research, Responsibility and Uncertainty (3 EC)	
Free elective (3 EC)	Elective (3 EC)
Q3	Q4
<u>Science in Society research project</u> (30 EC)	

Compulsory courses (24 EC)

Elective (3 EC) has to be related to the subject of the research project and needs to be approved by the coordinator.

Free elective (3 EC)

Research Project (30 EC)

Appendix 3. Programme of the site visit

Day 1 (Thu 23 September 2021)		
8.45	9.00	Arrival panel & welcome
9.00	10.00	Panel discussion
10.00	11.00	Meeting with Board Education Institute Biosciences
11.00	11.15	Panel discussion
11.15	12.00	Meeting with 6 students of the BSc Biology, incl. 2 alumni
12.00	12.45	Lunch
12.45	13.30	Meeting with lecturers of the BSc Biology
13.30	14.00	Panel discussion
14.00	14.45	Meeting with students of the MSc Biology
14.45	15.30	Meeting with lecturers of the MSc Biology
15.30	16.00	Panel discussion
16.00	16.45	Meeting with students of the MSc Medical Biology
16.45	17.30	Meeting with lecturers of the MSc Medical Biology, incl. SMI & SiS
17.30	18.00	Panel discussion

Day 2 (Fri 24 September 2021)		
8.45	9.00	Arrival panel
9.00	9.30	Panel discussion
9.30	10.15	Meeting with alumni of the MSc Biology and MSc Medical Biology
10.15	10.45	Meeting with the examination board
10.45	11.15	Panel discussion
11.15	12.00	Discussion about assessment
12.00	12.45	Lunch
12.45	13.45	Tour of facilities
13.45	14.15	Meeting with our education support
14.15	15.00	Voorbereiden eindgesprek formeel verantwoordelijken
15.00	15.45	Final meeting with those formally responsible
15.45	17.15	Panel discussion ("Opstellen voorlopige bevindingen")
17.15	17.30	Public presentation of concept evaluation
17.30		Drinks

Appendix 4. Materials

Prior to the site visit, the panel studied 15 theses from the specialisations Human Biology (5 theses), Medical Epigenomics (2), Neurobiology (2), Science, Management and Innovation (4) and Science in Society (1). This selection reflects the graduate numbers in these specialisations. Information on the theses is available from Academion upon request. The panel also studied other materials, which included:

General	
Overview & reading guide	A. Overview documents (this file) B. Reading guide documents
SWOT	A. SWOT BSc Biology B. SWOT MSc Biology C. SWOT MSc Medical Biology
Student chapter	A. BSc Biology mp4 B. MSc Biology mp4 C. MSc Medical Biology mp4 D. Highlights
Regulations	
EER	
Rules and Regulations	
Annual Reports & Minutes	A. Annual reports Education Institute Biosciences (2018-2019 & 2019-2020) B. Minutes Education Institute Biosciences Board (2019-2020) C. Minutes Programme Committee (2019-2020) D. Minutes Examination Board (2019-2020)
Programmes	
Course guide: including programme profile and goals and competences	A. Course guide B. Courses versus Goals BSc and MSc programme (VM) C. Programme overviews
Biology in Society (BiS), Skills & Portfolio (incl. student guidance)	A, B. BSc BiS & Skills C. BSc & MSc Portfolio
Reference framework	9A. BSc Biology 9B. MSc Biology
BSc Biology Programme revision	A. Report of the "preadviescommissie" (2014) B. Report of the "curriculumherzieningscommissie" (2016)
English-taught programmes	Beleidskader voertaal opleidingen University teaching qualification
Numerus Fixus	

Brightspace	Access to 11 courses
Professional field report	
Labour market research alumni	15A. NIBI arbeidsmarktonderzoek Masters per mastercluster 15B. NIBI arbeidsmarktonderzoek Masters RU 15C. NIBI arbeidsmarktonderzoek Masters per werksector
COVID-19 impact (incl. exams)	16A. Impact & adjustments 16B. COVID-19 FNWI report 16C. COVID-19 adjustments within Biology programmes
Facts, figures & procedures	
Facts	17A. Enrollment numbers BSc & MSc
	17B1. BSc BSA 17B2. BSc success rate 17B3. BSc to MSc numbers
	17C. Msc Biology and Msc Medical Biology succes rate
	17D. Staff & Examiners (2020)
Course dossiers	18A BSc Biology course 1,2,3 18B MSc Biology course 1,2,3 18C MSc Medical Biology course 1,2,3 18D MSc SMI course 1 and SiS course 2
A. List of final projects (internships) for students in 2019-2020 for the BSc and MSc B. Selected final projects per panel member	
BSc Internship	procedure
	organising
	departments
	internship plan & assessment forms
MSc Biology Research Internships	
MSc Medical Biology Research Internships	
MSc Biology & MSc Medical Biology Review Article	Information (course guides) Example Review articles (VM): 2 MSc Biology (23A&B) 2 MSc Medical Biology (23C&D)
MSc Biology & MSc Medical Biology Research Proposal	Information (course guides) Example Research Proposals (VM): 2 MSc Biology (24A&B) 2 MSc Medical Biology (24C&D)