MASTER'S PROGRAMME BIOBASED MATERIALS

FACULTY OF SCIENCE AND ENGINEERING

MAASTRICHT UNIVERSITY

Qanu
Catharijnesingel 56
PO Box 8035
3503 RA Utrecht
The Netherlands

Phone: +31 (0) 30 230 3100
E-mail: support@qanu.nl
Internet: www.qanu.nl

Project number: Q0789

CONTENTS

This report was finalised on 14 July 2021

REPORT ON THE MASTER'S PROGRAMME BIOBASED MATERIALS OF MAASTRICHT UNIVERSITY

This report takes the NVAO's Assessment Framework for the Higher Education Accreditation System of the Netherlands for limited programme assessments as a starting point (September 2018).

ADMINISTRATIVE DATA REGARDING THE PROGRAMME

Master's programme Biobased Materials

Name of the programme:	Biobased Materials
CROHO number:	60955
Level of the programme:	master's
Orientation of the programme:	academic
Number of credits:	120 EC
Location:	Brightlands Chemelot Campus, Sittard-Geleen
Mode of study:	full time
Language of instruction:	English
Submission deadline NVAO:	01/11/2020, extension submission date until 30/07/2022 due to legislation WHW art. 5.8 lid 4

The visit of the assessment panel to the Faculty of Science and Engineering of Maastricht University took place on November 12, 2020.

ADMINISTRATIVE DATA REGARDING THE INSTITUTION

Name of the institution:	Maastricht University
Status of the institution:	publicly funded institution
Result institutional quality assurance assessment:	positive

COMPOSITION OF THE ASSESSMENT PANEL

The NVAO has approved the composition of the panel on 08-09-2020. The panel that assessed the master's programme Biobased Materials consisted of:

- Prof. dr J.H. (Han) de Winde, professor in Industrial Biotechnology at Leiden University [chair];
- Prof. dr A. (Alexander) Bismarck, professor in Materials Chemistry at the Universität Wien (Austria);
- M.M.T. (Monique) Wekking MSc., senior business developer at TNO (sustainable chemical industry) and programme manager Biorizon;
- R.C.W. (Rick) Arts BSc., master's student in Chemical and Process Technology at the Eindhoven University of Technology [student member].

The panel was supported by dr M.J. (Marijn) Hollestelle, who acted as secretary.

WORKING METHOD OF THE ASSESSMENT PANEL

For the assessment of the master's programme Biobased Materials, Maastricht University asked quality assurance agency Qanu to aid in logistical support, panel guidance and the production of the report. Dr Marijn Hollestelle was project coordinator for Qanu and acted as secretary for the assessment.

Preparation
On 29 September 2020, the panel's chair was briefed by Qanu on his role, the assessment framework, the working method, and the planning of the site visit and report. A preparatory panel meeting was organised on 11 November 2020. During this meeting, the panel members were instructed in the use of the assessment framework. They also discussed their working method for the site visit and report.

The project coordinator composed a schedule for the site visit in consultation with the Faculty. Prior to the site visit, the Faculty selected representative partners for the various interviews. See Appendix 3 for the final schedule.
Before the site visit to Maastricht University, Qanu received the self-evaluation report of the programme and made this available to the panel. A thesis selection was made by the panel's chair and the project coordinator. The selection consisted of 15 theses and their accompanying assessment forms, based on a list of graduates from 2017-2019. A variety of topics and a diversity of examiners were included in the selection. The project coordinator and panel's chair ensured that the distribution of grades in the selection matched the distribution of grades of all available theses.

After studying the self-evaluation report, theses and assessment forms, the panel members formulated their preliminary findings. The project coordinator collected all of the initial questions and remarks and distributed them amongst all panel members. At the start of the assessment, the panel discussed its initial findings on the self-evaluation report and the theses, as well as the division of tasks during the assessment.

Assessment
The site visit to Maastricht University took place on 12 November 2020. Before the assessment started, the panel studied the additional documents provided by the programme. An overview of these materials can be found in Appendix 4. The panel conducted interviews with representatives of the programme: students and staff members, the programme's management, alumni and representatives of the Board of Examiners. It also offered the students and staff members an opportunity for a confidential discussion during a consultation hour. No requests for a private consultation were received.

The panel used the final part of the assessment to discuss its findings in an internal meeting. Afterwards, the panel's chair publicly presented the panel's preliminary findings and general observations.

A separate development dialogue was held on 16 December 2020.

Report
After the assessment, the project coordinator wrote a draft report based on the panel's findings and submitted it to a colleague for peer review. Subsequently, the project coordinator sent the report to the panel. After processing the panel members' feedback, the draft report was sent to the Faculty in order to have it checked for factual irregularities. The project coordinator discussed the ensuing comments with the panel's chair and changes were implemented accordingly. The report was then finalised and sent to the Faculty and University Board.

Definition of judgements standards
In accordance with the NVAO's Assessment framework for limited programme assessments, the panel used the following definitions for the assessment of the standards:

Generic quality
The quality that, from an international perspective, may reasonably be expected from a higher education Associate Degree, Bachelor's or Master's programme.

Meets the standard
The programme meets the generic quality standard.

Partially meets the standard
The programme meets the generic quality standard to a significant extent, but improvements are required in order to fully meet the standard.

Does not meet the standard
The programme does not meet the generic quality standard.

The panel used the following definitions for the assessment of the programme as a whole:

Positive
The programme meets all the standards.

Conditionally positive
The programme meets standard 1 and partially meets a maximum of two standards, with the imposition of conditions being recommended by the panel.

Negative
In the following situations:
- The programme fails to meet one or more standards;
- The programme partially meets standard 1;
- The programme partially meets one or two standards, without the imposition of conditions being recommended by the panel;
- The programme partially meets three or more standards.

SUMMARY JUDGEMENT

Standard 1

The panel appreciates the aim of the MSc programme Biobased Materials at Maastricht University to educate and deliver graduates specialised in developing sustainable, novel, functional materials and biobased replacements for currently used materials from biomass. It considers the multidisciplinary approach and the additional focus on process and disposition to be well-chosen and topical. The organisational embedding within MU and the proximity of various research institutes and collaborations in and around the Brightlands Chemelot Campus are beneficial to the programme, which is connected to research initiatives as well as to the professional field. The panel noticed that the programme aims to capture the entire bio value chain, expanding its focus beyond biobased materials as such. The challenge for the programme would be focusing primarily on sustainable (biobased, renewable or recycled) materials. Following the initial accreditation, the programme has followed up the advice of the previous panel and included an explicit reference to the importance and implementation of green chemistry in the intended learning outcomes. According to this panel, the programme's intended learning outcomes (ILOs) reflect its profile. They demonstrate the level and orientation that can be expected of an academic master's programme, and tie in with the Dublin descriptors. They also match the expectations of the international professional field.

Standard 2

The panel concludes that the curriculum is built up in such a way as to provide all students with a solid background in biology, chemistry, material science and engineering as well as applications relevant for biobased materials. The electives give them the opportunity to focus on one or more of these disciplinary areas. The curriculum is well-designed and coherent. The programme's ILOs have been adequately translated into course goals. The regular constructive alignment sessions safeguard the alignment of the courses with the programme's goals and ensure that all ILOs are sufficiently covered throughout the curriculum. The programme is feasible: in previous years, 83-85% of the students finished within two years. PBL serves as a great preparation for discussing and tackling problems on a professional level. RBL prepares the students to propose and execute original research, also giving them a taste of how industries work and what they aim for. The teaching methods are very fitting for the programme and its specific goals, and enables the students to achieve the ILOs. The panel is convinced that the programme provides an academic orientation for its students, combined with a strong professional outlook and connection with the industrial field.

The panel is positive about the didactic skills and the English proficiency of the very dedicated staff, which are sufficient to successfully teach the programme. The small size of the groups provides a personal atmosphere, which facilitates discussion and contributes to the quality of the programme. The staff is approachable, and the students receive sufficient feedback on their work. Academic advisors meet with the students on a regular basis and guide them through the programme and advise them on suitable electives. This enables the students to develop a coherent curriculum, tailored to their specific needs.

The panel considers the small-scale international classroom as especially fitting the internationally oriented and multidisciplinary biobased materials field and the PBL/RBL environment. The programmes deliver graduates who are able to provide substantial and potentially leading contributions in multidisciplinary teams with people from different backgrounds, working in an international setting. The English programme name and the use of English as the language of instruction is of added value for the quality of the teaching-learning environment and the students' future careers. The facilities of the programme further strengthen the student-centred, innovative and active learning environment. The programme's location at the Chemelot Campus enables the students to gain the required practical insights and skills, leading them to develop expertise in the biobased materials field, also in collaboration with the companies present on the campus. The location is thus a strong asset and contributes significantly to the success of the programme. The panel concludes that the teaching-learning environment enables the students to achieve the intended learning outcomes.

Standard 3

The panel concludes that the programme's student assessment system in place is adequate. It praises the solid implementation of constructive alignment within the programme, which ensures that all ILOs are assessed within the courses. The variety of assessment methods used is an asset to the programme. The thesis assessment is well-designed, employing two academic supervisors who assess the thesis independently and seek consensus afterwards. The thesis assessment forms include sufficient qualitative feedback and insightful rubrics. The panel recommends enhancing the practicality of the rubrics by reducing the level of detail in them, and focussing more on written comments to reflect the points given instead. The Board of Examiners fulfils its role in the quality assurance of assessment very well, and has the checks and balances in place to monitor the quality of the exams as well as the theses. The panel is very positive about the student assessment system of the programme, which enables a sound, transparent and verifiable way of assessing if the ILOs are met.

Standard 4

The panel concludes that graduates of the programme successfully achieve the ILOs. The theses demonstrate that they have obtained a solid foundation in the necessary biology, chemistry, materials science and engineering disciplines which provide the theoretical, methodological and practical aspects of the biobased materials field. They have knowledge and understanding of the integrative process of the biobased materials field and are capable of doing multi- and interdisciplinary research to address complex real problems through teamwork and collaborative networks. More than once, the results have provided valuable input for the participating researchers or companies in solving the issues at hand. The panel noted that some students did not explicitly state their research objectives and that references to industrial practices or pending patents could sometimes be better addressed. These omissions did not, however, affect the high level achieved. Alumni are in high demand and are employed in academia and in industry, also internationally. They mentioned the interdisciplinary nature of the programme as a strength for their current work environment. These testimonies confirm the panel's positive impression of the programme's achievement level.

The panel assesses the standards from the *Assessment framework for limited programme assessments* in the following way:

Master's programme Biobased Materials

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

The chair, prof. dr Han de Winde, and the secretary, dr. Marijn Hollestelle, of the panel hereby declare that all panel members have studied this report and that they agree with the judgements laid down in it. They confirm that the assessment has been conducted in accordance with the demands relating to independence.

Date: 14 July 20214

DESCRIPTION OF THE STANDARDS FROM THE ASSESSMENT FRAMEWORK FOR LIMITED FRAMEWORK ASSESSMENTS

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 programme Biobased Materials at Maastricht University (MU) aims to educate and deliver innovative and creative scientists who make important contributions to the biobased society of the future. According to its self-evaluation report, it connects to a clear development within society: the increased use of reusable and biobased and/or bio-degradable 'green' materials replacing petrol-based chemicals and polymers/plastics. Graduates are trained to specialise in developing sustainable, novel, functional materials and biobased replacements for currently used materials from biomass. As a result, the programme focuses not only on content knowledge in various disciplines, e.g. biology, chemistry, material science and engineering natural sciences, but also on process (e.g. problem-solving skills, methodological approaches) and disposition (the ability to work effectively in a cross-disciplinary research team).

The master's programme Biobased Materials is organised within the Faculty of Science and Engineering (FSE) at MU and benefits from the collaboration with RWTH-Aachen University in a joint institute on biobased materials (AMIBM, Aachen Maastricht Institute of Biobased Materials). In addition, the programme benefits from MU's participation in and around the Brightlands Chemelot Campus. Here, MU joined forces with the University of Eindhoven, DSM and the Chemelot Institute for Science and Technologies (InSciTe) to focus on two fields of research: Biobased Building Blocks and Biomedical Materials. The panel finds that the organisational embedding and the proximity of various research institutes and collaborations are clearly beneficial to the setup of the programme, which is connected to research initiatives as well as to the professional field.

The panel studied the profile of the MSc Biobased Materials and discussed it with the programme management, as well as with teaching staff members, students and graduates. It considers the profile well-chosen and topical. During the initial audit visitation in 2015, that panel advised including an explicit reference to the importance and implementation of green chemistry in the intended learning outcomes. This panel is pleased to see that the advice was taken to heart, and the reference to the importance and implementation of green chemistry is now reflected in the context of sustainability in ILOs 1.1 "Core Knowledge" and 1.3, 1.5-1.8 "Biobased or Discipline Knowledge", aligning with the core competencies of Green Chemistry. It noticed that the programme aims to capture the entire bio value chain, expanding its focus beyond biobased materials as such. In combination with the multidisciplinary and skill-based setup of the MSc and the rapidly changing research field it connects with, this seems ambitious. The challenge for the programme would be focusing primarily on sustainable (biobased, renewable or recycled) materials.

The programme translated its profile into a set of intended learning outcomes (ILOs, see Appendix 1). The panel finds that they reflect the level and orientation that can be expected of an academic master's programme and tie in with the Dublin descriptors. It considers that the knowledge-related ILOs adequately describe the expected disciplinary content that graduates are expected to have mastered. It finds the attitude- and skill-related ILOs to be sufficiently concrete and in line with the programme's focus on process and disposition. These ILOs (for instance ILO 4) also explicitly tie in with the expectations of the international professional field.

Considerations

The panel appreciates the aim of the MSc programme Biobased Materials at Maastricht University to educate and deliver graduates specialised in developing sustainable, novel, functional materials and biobased replacements for currently used materials from biomass. It considers the multidisciplinary approach and the additional focus on process and disposition to be well-chosen and topical. The organisational embedding within MU and the proximity of various research institutes and collaborations in and around the Brightlands Chemelot Campus are beneficial to the programme, which is connected to research initiatives as well as to the professional field. The panel noticed that the programme aims to capture the entire bio value chain, expanding its focus beyond biobased materials as such. The challenge for the programme would be focusing primarily on sustainable (biobased, renewable or recycled) materials. Following the initial accreditation, the programme has followed up the advice of the previous panel and included an explicit reference to the importance and implementation of green chemistry in the intended learning outcomes. According to this panel, the programme's intended learning outcomes reflect its profile. They demonstrate the level and orientation that can be expected of an academic master's programme, and tie in with the Dublin descriptors. They also match the expectations of the international professional field.

Conclusion

Master's programme Biobased Materials: the panel assesses Standard 1 as 'meets the standard'.

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

Content and structure of the programme

In the first year, the students follow the Biobased Materials (6 EC) and Process Technology (6 EC) courses in period one. In period two, they take the Plant-Derived Materials and Building Blocks course (6 EC) and are assigned to either Molecular Biology and Physiology of Plants and Microbes (6 EC) or Principles of Materials Science (6 EC), depending on the focus of their previous academic study. Period three is used for Research Project 1 (6 EC). In period four, the students choose two of the following four electives: Molecular Genetics & Biotechnology (6 EC), Advanced Macromolecular Chemistry: Biopolymers synthesis, modification and characterization (6 EC), Applied Materials Science and Engineering (6 EC), Biomedical Materials (6 EC). In the next period, they again choose two out of four electives: Plant-Derived Materials (6 EC), Surfaces and Interfaces: Modification and Spectroscopical Analysis (6 EC), Nano-science and Nano-technology: (Bio)polymers and (Bio)composites (6 EC), Sustainability of Biobased Materials (6 EC). The first year is completed with Research Project 2 (6 EC).

In the second year, the students follow two of three electives: Carbohydrates: Monomers and Polymers (6 EC), Materials Molecular Engineering: structure-function relationships (6 EC), Commercialization and Entrepreneurship (6 EC). The programme is completed by the Master Thesis BBM (47 EC). During the Research Project 1 and 2 modules in the first year, the students start to build up a research portfolio. Before starting their Master Thesis, they complete their research portfolio. The portfolio counts for 1 EC and is part of the master's thesis Biobased Materials.

The students start their research project by writing a thesis plan using a format provided by the programme, detailing the content of the thesis and the planning. This plan is approved by both examiners and is the formal starting point of the thesis trajectory. The thesis research is often conducted in collaboration with industrial partners. When the research is completed, the student writes a master's thesis in the form of a scientific report, and defends it in public. The students indicated that they appreciate the wide range of options for master's thesis research offered by the university, which is very well aligned with the multidisciplinary view and purpose of the master programme.

According to the panel, the curriculum is built up in such a way as to provide all students with a solid background in biology, chemistry, material science and engineering, as well as applications relevant for biobased materials. The electives give the students the opportunity to focus on one or more of these disciplinary areas. The panel is positive about the programme's feasibility: the students indicated that the programme is feasible, and the numbers confirm this as well: in the past years, 83-85% of the students finished within two years.

All programme ILOs are covered by at least one mandatory course (compulsory courses, projects or thesis), ensuring that they are part of the curriculum of all students. The panel is of the opinion that the recent choice for two courses in the first period and 2 electives out of 3 in the second period is a good way to create a level playing field among students with a diverse background. The choice of electives determines which discipline(s) and applications are strengthened over the elective part of the curriculum. The panel is positive about this tailored flexibility, fitting the background of the diverse student population.

The programme employs a method called Constructive alignment, a tool used throughout the university, which refers to an approach to instructional design that integrates learning outcomes, educational activities and assessment. Annually, alignment between the course goals, assessment and the programme's ILOs is evaluated and when necessary adjusted during constructive alignment sessions with representatives of the entire programme, including the programme director, Board of Examiners and Programme Committee.

The panel studied the curriculum as well as the content of a number of courses and projects, and spoke with students and staff about the content of the curriculum. It concluded that the curriculum is well-designed and coherent. The programme's ILOs have been adequately translated into course goals. The regular constructive alignment sessions safeguard the alignment of the courses with the programme's goals and ensure that all ILOs are sufficiently covered throughout the curriculum. The projects integrate the various courses and ensure a translation of knowledge and skills into practice. According to the panel, the skills learned through the projects are also very valuable for future professional work, which often includes working in project teams.

The panel studied the programme and the course descriptions. It observed a clear connection between the programme's content and the ILOs, which was confirmed during the interview with the students and alumni. After reading the selected theses, it agreed that, regardless of the obvious quality of the theses (see standard 4), in some cases scientific writing and critical analysis (i.e. statistics and errors) could receive more emphasis. These skills are important in preparation for an academic or industrial career. The panel suggests that the programme consider ways to address these skills more effectively during the programme. It is convinced that the programme provides an academic orientation for its students, combined with a strong professional outlook and connection with the industrial field.

Teaching methods

The didactic concept of the programme builds on the principles of Problem based Learning (PBL): a constructive, collaborative, contextual and self-directed learning approach. Teaching takes place in small groups of students under the intensive guidance of a teacher. At the centre of the PBL setting are real-life challenges, teaching students to approach them from various angles, which is a highly valued requirement for future professionals in the field of biobased materials. The students also develop a number of interpersonal skills, learn to work toward a common goal, share responsibilities, depend on each other and reach agreement through open interaction to solve the relevant problem at hand.

Each course in the programme is taught by a course coordinator (or multiple coordinators when combined expertise is needed). Course coordinators are members of the academic staff and are responsible for the design, content and teaching of the course. Courses with more than 15 students attending are split between the course coordinator and

one or more tutors. Tutors are also part of the academic staff, appointed either as a PhD candidate, postdoctoral fellow or assistant professor with expertise in the field.

The programme uses Research-Based Learning (RBL) during skills and project periods. The research skills training and projects are laboratory-based. In cooperation with research institutes and companies on the Brightlands campuses and beyond, the students formulate their own research questions, make their own discoveries and develop solutions and insights. An academic or industrial expert presents a current problem which is analysed and studied by the students. Regularly, their ideas for projects are tested or implemented during lab skills sessions or project periods. The results of these sessions provide valuable input for the participating researchers or companies in solving the issues raised. Eventually, these RBL activities culminate in the individual thesis.

The students are very positive about the PBL and RBL approach. PBL serves as a great preparation for discussing and tackling problems on a professional level, according to them. RBL is highly appreciated, because it prepares them to propose and execute original research, also giving them a taste of how industries work and what they aim for. The panel agrees that the teaching methods are very fitting for the programme and its specific goals, and enables the students to achieve the ILOs.

Teaching staff
Almost all staff have obtained a Univeristy Teaching Qualification (UTQ; Basiskwalificatie Onderwijs). The few who do not yet have one are currently enrolled in the Maastricht University Programme to obtain it. All staff have a PhD. The tutors are currently PhD students, who are also working on obtaining their UTQ and teach under the supervision of a course coordinator. In talking to staff and inspecting the staff list in the self-evaluation document, it is clear to the panel that the expertise of the staff matches the courses that are given. Multiple teachers can teach in a course when the differing expertise needed within the course requires this. With the current number of students enrolling in the programme, course groups remain of limited size (>15). This small group size benefits from the PBL concept, according to the panel. During the interviews, the students were positive about the didactic skills of their teachers and tutors. The staff also seems to be able to find a good balance between their teaching time and research time.

The panel is positive about the didactic skills of the teaching staff. It also observed a good balance between male/female teaching staff, which helps in attracting a well-balanced student body. The message it received from talking to the staff and students is that the teachers are very dedicated and that there is a real willingness of the staff to make the students succeed. The small size of the groups provides a personal atmosphere, which facilitates discussion and contributes to the quality of the lectures, tutorials and practice sessions. This also results in the staff being very approachable for the students. The panel wishes to indicate to the programme that when the number of students enrolling in the programme starts to grow, care should be taken to keep the groups of students small and maintain the balance between teaching and research time for the staff.

Teaching staff: language skills
In general, Maastricht University staff function in a multidisciplinary and international teaching and research environment. Teaching staff who teach more than 10% of their appointment and are non-native speakers are required to have a minimum English language proficiency requirement of C1 (CEFR) in accordance with the *MU Language Policy 2018-2021*. Academic staff who do not have this language proficiency attend courses to reach this level within three years. Additionally, MU international academic personnel with a permanent appointment are encouraged to attain a minimum language proficiency level of B1 (CEFR) in Dutch. MU keeps an overview of the language proficiency levels of its academic and support personnel and includes language development as a topic in performance and appraisal processes, hereby stimulating an active approach to language proficiency development at all levels of the institution. The panel agrees that the level of English language skills of the teaching staff is sufficient. The students the panel talked to, and those who worked together on the student chapter, are positive about the language skills of the staff.

Guidance, progression, student-centeredness

All students are assigned an academic advisor at the start of their studies. Academic advisors meet with their students at least twice a year, and guide them throughout the programme by helping them to select electives, formulate personal goals in relation to the programme and their future ambitions, and develop the reflective capabilities needed to monitor their progress towards achieving these goals. The panel thinks this is a good way to ensure the development of a coherent curriculum, tailored to the needs of the diverse student population. The students are also well prepared for the choice of the electives by the course coordinators, who pitch the electives to them and hold informative meetings to address their questions regarding electives. The students are able to take electives that are not part of the programme, but have to request this. The Board of Examiners checks if an elective that is not part of the programme fits the specific student, aids his/her direction of specialisation, and fits the ILOs.

The programme has an Educational programme committee (EPC), with three student members. The EPC reviews all course evaluations yearly and provides feedback to course coordinators and/or examiners. If improvements are needed, the course examiner devises an improvement plan and reports it on the assessment plan, providing a quality control checkpoint. The students indicated that they receive sufficient feedback from their teachers. They also provide and receive feedback to and from each other on their group work and performance, framed as practice for transferable teamwork skills. They praised the ongoing and intensive interaction with staff. A study advisor is also available throughout the academic year to provide advice on all matters pertaining to the study plan, study changes and academic growth and non-study related issues of the students.

International classroom

The programme has a highly diverse student population, and uses the policy of a small-scale 'international classroom'. The MU typically has a highly diverse student population and an integrated approach to teaching and learning, and pays continuous attention to the necessity of developing and training the required mind-set in the students and staff; this is a cornerstone of the MU internationalisation strategy. In the PBL and RBL systems, the students explore and discuss problems and cases with peers who have different perspectives and backgrounds. They are confronted with different ways of thinking and with viewpoints that would remain unexplored if the tutorial groups were more homogenous in composition. This stimulates them to generate a global and contextual awareness, which is highly important in research in a rapidly internationalising labour market. Having said this, the panel is convinced that the visibility of the programme can be improved, so the attraction for Dutch and also Flemish students can be improved. It pleases the panel that the programme is currently exploring ways to improve this.

Admission to the programme could be streamlined and easier to administer. A prerequisite for admission is a recommendation letter, which could mean an additional barrier for potential students. The panel suggests that this letter could be skipped. Students at the biobased materials master's programme have a heterogeneous cultural and educational background. Given the multidisciplinary character of the programme, this is generally very much appreciated. Especially in a problem/research-based learning environment, having multiple professional angles to approach a problem from increases the students' ability to understand the way the different disciplines of scientific research are connected. In addition, the small programme size positively contributes to the atmosphere between the students. Social activities are being organised outside of academic activities, knowledge and suggestions are often shared, and help is offered when others are struggling. The panel is positive about the International Classroom and the programme's explicit policy.

English language

The choice for the language of instruction of the master's programme Biobased Materials is in line with the MU code of Conduct on language in accordance with the Dutch Higher Education and Research Act (WHW) art. 7.2. Because of the specific educational nature and profile of the master degree programmes, the teaching and examinations are conducted in English. The content of the programme has an international orientation and focus as it is designed for students who are able to bridge the gap between the underlying academic fields or disciplines

while obtaining profound knowledge and understanding in their field of studies. To this end, all education, course content and materials are provided in English.

The academic community is internationally oriented, and the staff is international. The programme is characterized by crossing the boundaries of traditional disciplines and strengthening the links between these disciplines. They deliver graduates who are able to provide substantial and potentially leading contributions in multidisciplinary teams with people from different backgrounds. To prepare the students for working in these multidisciplinary and international teams, the programmes are offered in an international classroom setting, and English is the common language. The labour market demand is also very strongly internationally oriented. The programmes are not only characterized by strengthening the links between the disciplines, they also offer an industrial application. To participate in the research community upon graduation, home to diverse scientific fields and different nationalities, it is crucial that the students master the English language. Based on these findings, the panel is convinced that the English programme name and the use of English as the language of instruction is of added value for the quality of the teaching-learning environment and the students' future careers.

Programme-specific services
The students and teachers indicated that the setting in Centre Court is a great environment to study in. There is a stimulating atmosphere which definitely inspires the students to explore and investigate while feeling already connected at the same time to a chemical industrial cluster during their studies. The programme's facilities further strengthen the student-centred, innovative and active learning environment. The small-scale educational environment is reflected in the architecture of the faculty buildings, with many small group rooms designed specifically for PBL education. Moreover, MU's state-of-the-art laboratories and design facilities at the Brightlands Chemelot Campus ensures that the students gain the required practical insights and skills. This enables them to conduct laboratory research themselves to develop expertise in the biobased materials field. They are offered practical training and projects in chemical synthesis, characterisation and modification of biobased building blocks and materials, the modelling and prediction of material functionalities, the processing and modification of materials to obtain desired physical/chemical material properties, and study applications in dedicated laboratories. They conduct the research for their master's thesis at the Chemelot Campus, often in collaboration with a company. The panel suggests that in some cases, it could be considered fitting to send students to other Dutch universities for their thesis work.

Considerations
The panel concludes that the curriculum is built up in such a way as to provide all students with a solid background in biology, chemistry, material science and engineering as well as applications relevant for biobased materials. The electives give them the opportunity to focus on one or more of these disciplinary areas. The curriculum is well-designed and coherent. The programme's ILOs have been adequately translated into course goals. The regular constructive alignment sessions safeguard the alignment of the courses with the programme's goals and ensure that all ILOs are sufficiently covered throughout the curriculum. The programme is feasible: in previous years, 83-85% of the students finished within two years. PBL serves as a great preparation for discussing and tackling problems on a professional level. RBL prepares the students to propose and execute original research, also giving them a taste of how industries work and what they aim for. The teaching methods are very fitting for the programme and its specific goals, and enables the students to achieve the ILOs. The panel is convinced that the programme provides an academic orientation for its students, combined with a strong professional outlook and connection with the industrial field.

The panel is positive about the didactic skills and the English proficiency of the very dedicated staff, which are sufficient to successfully teach the programme. The small size of the groups provides a personal atmosphere, which facilitates discussion and contributes to the quality of the programme. The staff is approachable, and the students receive sufficient feedback on their work. Academic advisors meet with the students on a regular basis and guide

them through the programme and advise them on suitable electives. This enables the students to develop a coherent curriculum, tailored to their specific needs.

The panel considers the small-scale international classroom as especially fitting the internationally oriented and multidisciplinary biobased materials field and the PBL/RBL environment. The programmes deliver graduates who are able to provide substantial and potentially leading contributions in multidisciplinary teams with people from different backgrounds, working in an international setting. The English programme name and the use of English as the language of instruction is of added value for the quality of the teaching-learning environment and the students' future careers. The facilities of the programme further strengthen the student-centred, innovative and active learning environment. The programme's location at the Chemelot Campus enables the students to gain the required practical insights and skills, leading them to develop expertise in the biobased materials field, also in collaboration with the companies present on the campus. The location is thus a strong asset and contributes significantly to the success of the programme. The panel concludes that the teaching-learning environment enables the students to achieve the intended learning outcomes.

Conclusion
Master's programme Biobased Materials: the panel assesses Standard 2 as 'meets the standard'.

Standard 3: Student assessment
The programme has an adequate system of student assessment in place.

Findings

Assessment system
The assessment system of the master's programme Biobased Materials is based on the constructive alignment approach that was discussed under Standard 2. Course coordinators are requested annually to formulate an assessment plan for their course in which they demonstrate alignment between the course learning goals and the assessment within the course. The programme management, Programme Committee and Board of Examiners jointly compose an assessment matrix for the entire programme based on the course assessment plans, and check whether all ILOs are adequately covered in a coherent and progressive way throughout the curriculum. Exams with unexpected results (either too high or too low) and/or low student evaluations are investigated by the Board of Examiners.

Course examinations are used to assess whether the students individually master all aspects of the subjects and approaches taught. Projects are assessed by a project coordinator. The project process and deliverables are assessed on both the individual and the team level. Each group receives a grade for their work plan, the written report and oral presentation of their project results. Academic staff members, tutors and/or company/research representatives provide feedback on the process and deliverables to the project coordinator. Rubrics are used to ensure the fair and equal treatment of all students, and alignment of the grading with the overall course ILOs. In addition, the students actively participate in the continuous review, assessment and evaluation of their own work and the work of their peers.

The students have to monitor and take responsibility for their own learning. Self-directed learning and multiple forms of assessment per course (written exam, oral exam, proposal, report, exercises/problems, essay/reflection, poster, skills assessment, video, peer-review, participation) stimulate open discussion of the purpose and significance of assessment. Each course aims to develop different types and combinations of knowledge, understanding and skills in chemistry, biology, materials science, mathematics/engineering processes, and the use of appropriate assessment tools is encouraged. The assessment policy dictates that each course has at least two formal assessments at two different moments. To assess whether a student has mastered the requisite knowledge,

understanding and skills, all examiners of compulsory and elective courses of 8 weeks and longer are required to use at least two separate assessments, generally an integrative/summative final exam (to assess content-based and other learning outcomes) combined with assessment(s) of competence/skills . These forms of assessment cover the module's ILOs. The students indicated that they appreciate the variety of assessment methods used in the programme, even though it comes with a higher workload for both students and staff. They greatly value the project periods, laboratory skills and written assignments as preparation for a future career in academic research. They see the level of difficulty of the assessments as adequate and generally aligned with the topics covered during the courses.

The panel studied the assessment system of the programme, the assessment matrix, and some examples of assessment plans, exams and projects. It praises the solid implementation of constructive alignment within the programme, which ensures that all ILOs are assessed within the courses. The panel also was informed that the Board of Examiners, and its associated Assessment Platform, supports examiners with its expertise on assessment and provides guidance and support when asked. The programme intends to move to a system where exams are checked before they are administered, but due to the multidisciplinary orientation of the progamme this process needs to be carefully monitored and guided prior to being implemented. The check of all exams by the Assessment Platform would be a good method to further increase their validity, in the panel's view. Hence, the panel approves of the current steps taken and the care taken to find a right balance between the beneficial effects of such a check and the necessary matching of available staff expertise. The panel believes that the projects provide a good opportunity to assess skills such as communication, presenting, teamwork and writing. The close tutoring of project groups makes it hard to get away with free-riding behaviour, which was confirmed by both the students and staff during the interviews.

Thesis

The thesis is divided into two parts: master thesis execution (18 EC) and master thesis report and defence (30 EC). The assessment of the thesis consists of five components that evaluate the execution of the scientific method. Standardised and structured rubrics are in use for the assessment components that assess both the process and the product and cover the programme's ILOs. The thesis coordinator is responsible for the overall quality of the theses and ensures consistency of feedback and grading. S/he monitors the thesis process and evaluates whether the general scientific level, research, design and results of the thesis are of sufficient academic quality. S/he also instructs the research supervisors, first and second examiners. All theses are graded by institutional (MU) first and second examiners, even when the students do their thesis work abroad or in a company. In the latter case, the company supervisor provides input for the part of the work done at the company.

The two examiners and, if applicable, the external daily supervisor formulate their findings independently of each other. After the defence, the examiners meet, compare their findings and reach consensus on the final grade. They detail this in an assessment form, which includes grades in various sub-criteria and a rubric describing which grade is associated with what level. The panel is convinced of the quality and transparency of the assessment of the theses.

The students appreciated the fact that the master thesis is introduced to them very early in the programme, which gives them time to carefully assess the available opportunities at universities and companies. They value the thesis manual given to them prior to starting the project, because it provides clear guidelines for their work throughout the project.

Board of Examiners

The Board of Examiners (BoE) appoints the programme's examiners and monitors the quality of assessment within the programme. It is supported by the Assessment Platform, an advisory body of examiners with knowledge about constructive alignment and assessment, mandated by the BoE. The Assessment Platform assists the Programme Director and the BoE regarding quality assurance, evaluates and advises about constructive alignment, evaluates and advises about grading rubrics for exams (incl. thesis), evaluates samples of exams, and reports its findings to

the BoE. In case of irregularities, the BoE will provide feedback to the examiner. The Assessment Platform also provides feedback to the Programme Director to improve communication and inform changes at the programme level. The BoE reviews student evaluations of courses and samples of assessment and takes samples of master's theses in order to safeguard that graduates have met the ILOs.

The panel met the Board of Examiners and studied a number of its annual reports. It judged that the BoE fulfils its role in the quality assurance of assessment within the programme very well. There are checks and balances in place to closely monitor the quality of exams as well as theses, and the BoE gave the panel the impression that it is very well aware of its responsibilities within the programme. The panel applauds the independence and proactive nature of the BoE, which is well equipped to execute its legal responsibilities as a BoE. The BoE is approachable and has good practices in place for its task of quality control of the assessment procedures. In the interview, the panel brought up its observation that the rubrics for the thesis seem to be very detailed and complex, scoring specific items even to a fraction of a point one scale. This level of detail felt unnecessarily constraining to the panel, where rubrics should be considered a helpful tool to establish a mark. The Board of Examiners pointed out that they are happy with the way the rubrics are structurally used, but that the next step would now be to enhance their practicality of the rubrics , trimming down the amount of detail in them rubrics and focussing more on written comments to reflect the points given in the rubric. The panel supports this aspiration of the BoE.

Considerations

The panel concludes that the programme's student assessment system in place is adequate. It praises the solid implementation of constructive alignment within the programme, which ensures that all ILOs are assessed within the courses. The variety of assessment methods used is an asset to the programme. The thesis assessment is well-designed, employing two academic supervisors who assess the thesis independently and seek consensus afterwards. The thesis assessment forms include sufficient qualitative feedback and insightful rubrics. The panel recommends enhancing the practicality of the rubrics by reducing the level of detail in them, and focussing more on written comments to reflect the points given instead. The Board of Examiners fulfils its role in the quality assurance of assessment very well, and has the checks and balances in place to monitor the quality of the exams as well as the theses. The panel is very positive about the student assessment system of the programme, which enables a sound, transparent and verifiable way of assessing if the ILOs are met.

Conclusion

Master's programme Biobased Materials: the panel assesses Standard 3 as 'meets the standard'.

Standard 4: Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

Master's theses

Before the site visit, the panel studied 15 master's theses of the programme. It was positive about their quality. The research projects are generally well-designed, the addressed topics fit the programme goals, and the theses show sufficient academic skills and command of the English language. The theses demonstrated that the students have obtained a solid foundation in the necessary biology, chemistry, materials science and engineering disciplines which provide the theoretical, methodological and practical aspects of the biobased materials field. They have knowledge and understanding of the integrative process of the biobased materials field and are capable of doing multi- and interdisciplinary research to address complex real problems through teamwork and collaborative networks. More than once, the results have provided valuable input for the participating researchers or companies in solving the issues at hand.

The panel also noted some aspects of the presentation that could merit some further attention. Regardless of the obvious quality of the theses, in these cases scientific writing and critical analysis (i.e. statistics and errors) could be emphasised more as these skills are important in preparing for an academic or industrial career. In reading the selected theses, it was not always clear to the panel why the students undertook a certain research topic or approached a topic a certain way. Describing clear aims and objectives, for instance already in the project proposal leading up to the thesis, could bring out the aims of the research more transparently.
In some of the theses, references to industrial practices or pending patents could sometimes be included. The description of the experimental section in those cases could be a bit more elaborate.

Performance of Alumni
Graduates of the master's programme typically find a job in line with their degree. They are in very high demand and are employed at universities as PhD students and at a wide variety of companies, including AstraZeneca (Sweden), B4plastics (Belgium), and Corbion (south Netherlands). One alumna the panel spoke with started her own company. The alumni that the panel interviewed, including ones from both academia and industry, are satisfied with the programme and think that it provided them with the necessary knowledge and skills to be successful, both in academia and in industry. They mentioned the interdisciplinary nature of the programme as a strength for their current work environment. Those about to graduate are confident that they are well-prepared for their career. The panel thinks that the high employability as well as the positive attitude of the students and alumni are signs that the graduates of the programme successfully achieve the ILOs.

Considerations
The panel concludes that graduates of the programme successfully achieve the ILOs. The theses demonstrate that they have obtained a solid foundation in the necessary biology, chemistry, materials science and engineering disciplines which provide the theoretical, methodological and practical aspects of the biobased materials field. They have knowledge and understanding of the integrative process of the biobased materials field and are capable of doing multi- and interdisciplinary research to address complex real problems through teamwork and collaborative networks. More than once, the results have provided valuable input for the participating researchers or companies in solving the issues at hand. The panel noted that some students did not explicitly state their research objectives and that references to industrial practices or pending patents could sometimes be better addressed. These omissions did not, however, affect the high level achieved.

Alumni are in high demand and are employed in academia and in industry, also internationally. They mentioned the interdisciplinary nature of the programme as a strength for their current work environment. These testimonies confirm the panel's positive impression of the programme's achievement level.

Conclusion
Master's programme Biobased Materials: the panel assesses Standard 4 as 'meets the standard'.

GENERAL CONCLUSION

The panel judged that the master's programme Biobased Materials offered by Maastricht University meets all the standards of the NVAO assessment framework for limited programme assessment. The panel therefore gives a positive advice on the accreditation of the programme.

Conclusion
The panel assesses the *master's programme Biobased Materials* as 'positive'.

APPENDICES

APPENDIX 1: INTENDED LEARNING OUTCOMES

Dublin Descriptor	Programme Intended learning outcomes (Programme ILOs)
1. Students have a breadth of academic knowledge	**1.1 CORE KNOWLEDGE** Students have profound knowledge and understanding of the field of Biobased Materials, in particular the combination of the underlying scientific fields of biology, chemistry, and materials science and engineering in the context of industrial application and sustainability.
	1.2 DISCIPLINARY KNOWLEDGE. Students are able to identify appropriate theoretical frameworks to address a biobased materials problem. They can connect concepts across disciplines. They are able to integrate and apply models, theories, methods and techniques in the field of biobased material and have thorough knowledge of a specialty within the study programme, or thorough knowledge on the interface of the study programme with other fields, integrating disciplines into the field of biobased materials
	1.3 BIOBASED MATERIALS KNOWLEDGE Students have gathered extensive knowledge, competences and skills in identification, isolation, production, processing and application of biobased materials;
	1.4 ACADEMIC KNOWLEDGE Students are able to comprehend new emerging concepts, theories and techniques for research or problem-solving in the field of biobased materials;
	1.5 DISCIPLINE KNOWLEDGE Students have the basic knowledge to isolate biobased building blocks and biobased materials from biomass;
	1.6 DISCIPLINE KNOWLEDGE Students have the basic knowledge and skills to synthesize novel biobased building blocks, green materials and/or materials from refined biomass;
	1.7 DISCIPLINE KNOWLEDGE students have the basic knowledge and skills to design, process and shape the desired biobased materials into products with targeted functionality and performance;
	1.8 DISCIPLINE KNOWLEDGE Students are able to assess the impact of biobased materials and transfer the knowledge for different applications, for example biomedical application, sustainability and life cycle assessment, materials performance applications and others;
2. Students can apply their knowledge and understanding, and problem-solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study	**2.1 PROBLEM-SOLVING** Students can apply gathered scientific knowledge, competences, and skills to identify, formulate, analyse and suggest possible solutions to problems independently in the field of biobased materials;
	2.2 CONDUCT RESEARCH Students are able to comprehend new emerging concepts, theories and techniques and use these to initiate creative research for solving relevant problems in the field of biobased materials. Students have the academic skill to propose and conduct research on a problem concerning biobased materials, its production, processing or application, and report on it in a manner that meets the customary standards of the discipline;
	2.3 CONTRIBUTIONS Students possess professional and academic skills to provide a substantial and potentially leading contribution to the field in a multi- or interdisciplinary team, crossing the boundaries between disciplines;
	2.4 CONTEXTUAL AWARENESS Students are capable of applying the knowledge and understanding gained in the discipline of Biobased Materials in a broader social context. Students are aware of the impact and scope of biobased materials and their application on human society and the environment they live in. They take into account the global, environmental and economic context in their work. Students are aware of the professional, temporal and societal context within which they operate;
	2.5 PROFESSIONAL ATTITUDE Students have the ability to apply knowledge and understanding to complex, multi- or interdisciplinary problems, to formulate solutions and sustain arguments for those solutions in a professional fashion, both independently and in a team. Students are capable of applying knowledge and understanding in a way which demonstrates a professional attitude and ethical responsibility to their work or profession;
	2.6 APPLY TECHNICAL SKILLS Students can apply relevant skills and techniques to evaluate structure-function relationships of materials and assess their potential application.
3. Students have the ability to integrate knowledge and handle complexity, and formulate judgments with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments;	**3.1 SCIENTIFIC ATTITUDE** Students have a scientific attitude aimed at learning and the generation of new knowledge and viewpoints;
	3.2 CRITICAL ANALYSIS Students are capable of critical interpretation and evaluation of research results obtained and derivation of new scientific insights. Students are able to critically analyse scientific publications or research proposals including hypothesis, problem definition, approach, interpretation of results, conclusions, limitations;
	3.3 JUDGEMENT Students are capable of critical interpretation and evaluation of research results obtained and derivation of new scientific insights;
	3.4 SOCIAL RESPONSABILITY Students are able to discuss and predict the impact, effects and application of Biobased Materials and their production on human society and the environment they live in;
	3.5 ETHICS Students have developed into responsible and ethical scientists who show social responsibility in the transition towards a biobased and sustainable society;

4. Students can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously;	**4.1 COMMUNICATION** Students are capable of communicating in English conclusions, as well as the underlying knowledge, grounds and considerations, to an audience composed of specialists or non-specialists. Students can communicate and create links with and between scientists and experts involved in the development, application and commercialisation of biobased materials. Students have the ability to communicate and cooperate in multi- or interdisciplinary teams with focused assignments and collaborate effectively and appropriately with people from different socio-cultural and national backgrounds;
	4.2 LEADERSHIP AND TEAMWORK. Students have the ability to lead an interdisciplinary team of individuals and are able to take adequate decisions within the team in the context of academic and industrial biobased materials and applications;
	4.3 EVALUATION Students have the capability to perform and communicate self- and peer-evaluation in order to continually improve themselves and their peers;
5. Students have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous	**5.1 INNOVATIVE ACTITUDE** Students demonstrate a creative and innovative attitude in their work that is driven by scientific curiosity and life-long learning;
	5.2 CRITICAL THINKING Students have the ability to reach and support a conclusion in a logically structured fashion based on evidence, in an intellectually honest and reflective fashion and are able to comprehend new emerging concepts, theories and techniques and use these to initiate creative research for solving relevant problems in the field of biobased materials;
	5.3 LEARNING Students are able to optimally extract information provided / resulting from lectures, group assignments, journal clubs etc. Students are able to effectively use Problem-Based Learning and Research-Based Learning;
	5.4 EXTEND KNOWLEDGE Students have the ability to independently maintain and extend professional knowledge and competences.

APPENDIX 2: OVERVIEW OF THE CURRICULUM

General curriculum

	8 weeks	8 weeks	4 weeks	8-9 weeks*	8-9 weeks*	4 weeks
Year 1	Compulsory courses	Compulsory courses	Project	Elective courses	Elective courses	Project
Year 2	Elective courses	Master Thesis research project				

**adjusted to compensate for various public holidays.*

Year 1

Period 1

- Biobased Materials (6 ECTS)
- Process Technology (6 ECTS)

Period 2

- Molecular Biology and Physiology of Plants and Microbes* (6 ECTS)
- Principles of Materials Science* (6 ECTS)
- Bio-organic Chemistry of Biobased Materials & Biobased Building Blocks* (6 ECTS)

* Students are assigned to two out of three of these modules based on previous education and preferences. This is done with a committee assembled during Period 1. Decisions are based on student previous education and personal preference. Students are asked to express preference by email to the office of student affairs.

Period 3

- Research Project 1 (6 ECTS)

Period 4

2 of the following electives:

- Molecular Genetics & Biotechnology (6 ECTS, offered starting 2021)
- Advanced Macromolecular Chemistry: Biopolymers synthesis, modification and characterization (6 ECTS)
- Applied Materials Science and Engineering (6 ECTS)
- Biomedical Materials (6 ECTS)

Period 5

2 of the following electives:

- Plant Derived Materials and Building Blocks (6 ECTS)
- Surfaces and Interfaces: Modification and Spectroscopical Analysis (6 ECTS)
- Nano-science and Nano-technology: (Bio)polymers and (Bio)composites (6 ECTS)
- Sustainability of Biobased Materials (6 ECTS)

Period 6

- Research Project 2 (6 ECTS)

Year 2

Period 7

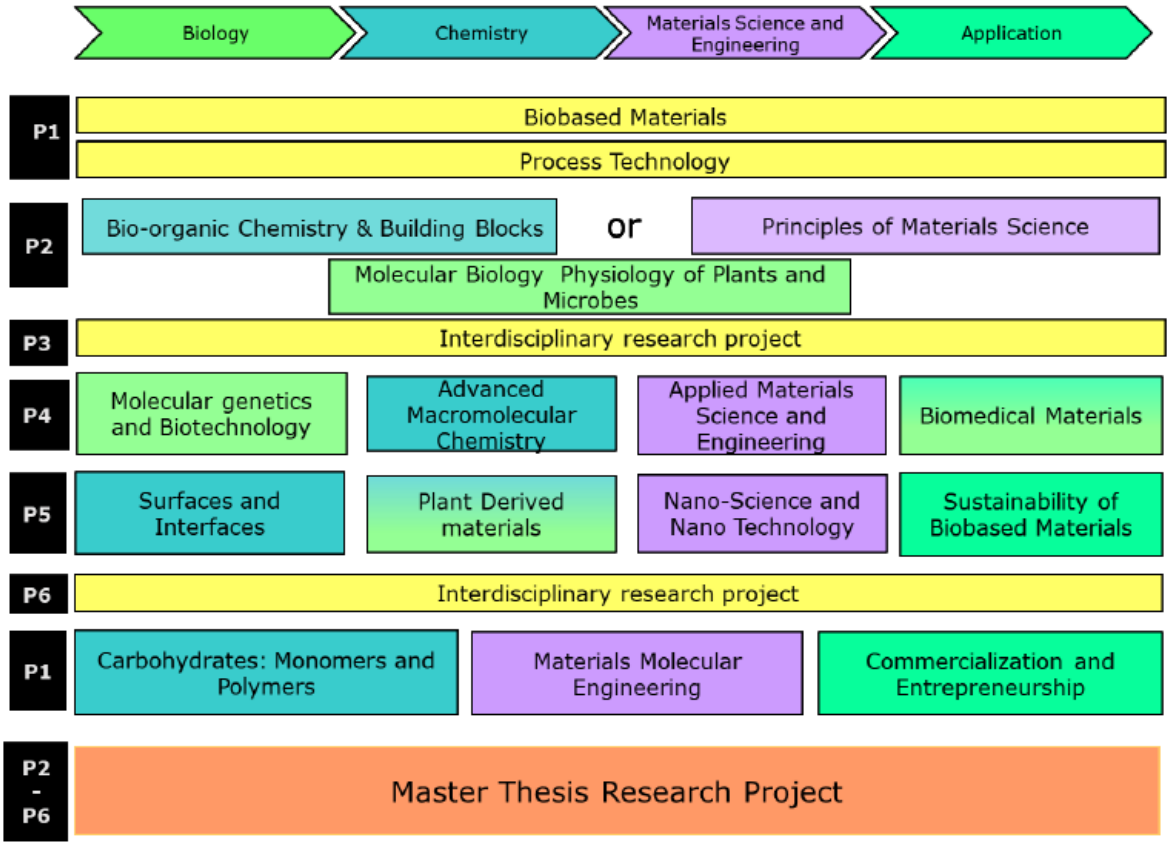
2 of the following electives:

- Carbohydrates: Monomers and Polymers (6 ECTS)
- Materials Molecular Engineering: structure-function relationships (6 ECTS)
- Commercialization and Entrepreneurship (6 ECTS)

Period 8

- Master Thesis BBM* (47 ECTS + 1 ECTS BBM research portfolio*)

*The BBM research portfolio is initiated in period 2 (year 1) and finished after period 7 (year 2). Overall, the BBM research portfolio is awarded 1 ECTS, which is part of the Master thesis BBM.



APPENDIX 3: PROGRAMME OF THE SITE VISIT

Programme BBM digital accreditation meeting

08.30 - 09.15	Preliminary panel meeting
09.15 - 10.00	**Interview: Programme management**
10.00 - 10.15	Break / internal deliberation
10.15 - 11.00	**Interview: Educational Programme Committee**
11.00 - 11.15	Break / internal deliberation
11.15 - 12.00	**Interview: Students and alumni**
12.00 - 12.15	Break / internal deliberation
12.15 - 13.00	**Interview: Teachers**
13.00 - 13.45	Lunch
13.45 - 14.30	**Interview: Board of Examiners**
14.30 - 15.00	Internal deliberation, formulation of last questions
15.00 - 15.45	**Programme management and formal responsible management**
15.45 - 17.15	Formulating preliminary findings
17.15 - 17.30	**Oral feedback of preliminary findings**
17.30	Wrap-up

APPENDIX 4: THESES AND DOCUMENTS STUDIED BY THE PANEL

Prior to the site visit, the panel studied 15 theses of the master's programme Biobased Materials. Information on the selected theses is available from Qanu upon request.

During the site visit, the panel studied, among other things, the following documents (partly as hard copies, partly via the institute's electronic learning environment):

Programme quantitative data

Staff list

MU Language Policy 2018-2021

Curriculum Overview and Course Descriptions

Constructive Alignment

Assessment Policy

Education and Examination Regulations (EER)

Master Thesis Information

Final grading form master thesis project

Assessment of the Master Thesis Research Proposal

Midterm Assessment of the Practical Work of Master Thesis

Final Assessment of the Practical Work of Master Thesis

Assessment document written master thesis

Assessment of the Presentation and Defence master thesis