

PROGRAMME REVIEW

**International Master of Science in Sustainable
and Innovative Natural Resource Management
(SINReM)**

Ghent University, Technische Universität Bergakademie Freiberg and
Uppsala University

Brussels - January 2023

PROGRAMME REVIEW SINReM

VLUHR Quality Assurance
Ravensteingalerij 27
1000 Brussels

This report is electronically available at www.qualityassurance.vluhr.be/assessment-reports.

Legal deposit number: D/2023/12.784/1

Content

Preface VLUHR Quality Assurance Board.....	3
Introduction.....	4
Review process	4
Standards for quality assurance of joint programmes in the EHEA	4
Decision rules	5
Preparation.....	5
Visit.....	5
Report.....	5
Programme report	7
Context of the study programme	7
Standard 1. Eligibility	8
Standard 2. Learning Outcomes	10
Standard 3. Study Programme [ESG 1.2].....	13
Standard 4. Admission and Recognition [ESG 1.4]	16
Standard 5. Learning, Teaching and Assessment [ESG 1.3]	18
Standard 6. Student Support [ESG 1.6].....	20
Standard 7. Resources [ESG 1.5 & 1.6].....	21
Standard 8. Transparency and Documentation [ESG 1.8].....	22
Standard 9. Quality Assurance [ESG 1.1 & part 1]	23
Final judgement of the assessment panel	24
Summary of the commendations	25
Summary of the recommendations.....	26
Annexes.....	27
Annex 1: Administrative details of the programme.....	27
Annex 2: Short CV panel members	28
Annex 3: Visit schedule	29
Annex 4: Overview of consulted documents	30

Preface VLUHR Quality Assurance Board

Dear reader

This assessment report deals with the programme review of the International Master of Science in Sustainable and Innovative Natural Resource Management (SINReM), jointly organised by Ghent University (Belgium), Technische Universität Bergakademie Freiberg (Germany) and Uppsala University (Sweden). This programme review was conducted by an independent panel of experts between September 2021 and January 2023.

This report is intended for all stakeholders of the programme and provides a snapshot of its quality following the European Approach for External Quality Assurance of Joint Programmes. As chair of the VLUHR Quality Assurance Board I hope that the panel's findings, judgements, recommendations and commendations will advance this programme. Additionally, this report intends to provide information regarding the quality of the programme to a wider audience. For this reason, this report is published on the website of VLUHR QA.

I would like to thank all members of the panel for the time they invested and the dedication they showed carrying out this programme review. At the very same time, this review was only possible because of the commitment of all those involved at the programme. I hope this report does justice to their efforts.

Petter Aaslestad
Chair VLUHR Quality Assurance Board

Introduction

In this report, the panel of the programme review SINReM presents its judgements and recommendations regarding the quality of International Master of Science in Sustainable and Innovative Natural Resource Management (SINReM) jointly organised by Ghent University (Belgium), Technische Universität Bergakademie Freiberg (Germany) and Uppsala University (Sweden).¹

The panel visited the programme on 11 and 12 October 2022 on behalf of VLUHR QA, the independent quality assurance agency of the Flemish Higher Education Council (VLUHR). The programme review was carried out in accordance to the VLUHR QA manual for the European Approach for Quality Assurance of Joint Programmes.²

The proposal of candidate panel members was approved by the VLUHR QA Board on 1 February 2022. The composition of the panel SINReM was ratified by the VLUHR QA Board on 28 June 2022.

The panel has the following composition³:

- Veiko Karu, Senior Project Manager for EIT Research and Development Projects at Tallinn University of Technology (TalTech), Head of Mining and Mineral Technology Division at Department of Geology, TalTech, Estonia (chair)
- Kathleen Van Heule, Senior staff member international office, HOGENT, Belgium
- Achim Kopf, Professor of Marine Geotechnics at MARUM - Center for Marine Environmental Sciences, University of Bremen, Germany
- Mara De Bruyn, Student master bio-engineer environmental science, KU Leuven, Belgium

Patrick Van den Bosch, Head of VLUHR QA, acted as project supervisor and secretary of the programme review.

Review process

Standards for quality assurance of joint programmes in the EHEA

The European Approach is mainly based on the ESG and on the Qualifications Framework for the European Higher Education Area (QF-EHEA). In addition, the European Approach takes into account the distinctive features of a joint programme and, thus, specifies the 'standard' approach accordingly.

The 9 standards and related substandards for quality assurance of joint programmes in the EHEA are:

1. Eligibility
 - 1.1 Status
 - 1.2 Joint design and delivery
 - 1.3 Cooperation agreement
2. Learning outcomes
 - 2.1 Level
 - 2.2 Disciplinary field
 - 2.3 Achievement
 - 2.4 Regulated professions
3. Study programme
 - 3.1 Curriculum
 - 3.2 Credits
 - 3.3 Workload
4. Admission and recognition
 - 4.1 Admission

¹ Administrative details of the programme can be found in annex 1.

² www.qualityassurance.vluhr.be/documents

³ A short CV of each panel member can be found in annex 2.

- 4.2 Recognition
5. Learning, teaching and assessment
 - 5.1 Learning and teaching
 - 5.2 Assessment
6. Student support
7. Resources
 - 7.1 Staff
 - 7.2 Facilities
8. Transparency and documentation
9. Quality assurance

More detailed information regarding the (sub)standards can be found in the programme report.

Decision rules

The rules set out below are applicable to each standard.

- Compliant: The programme acts in accordance with the standard, and its implementation is effective.
- Partially Compliant: Some aspects or parts of the standard are met while others are not. The interpretation of the standard is correct, but the manner of implementation is not effective enough.
- Non-Compliant: The programme fails to comply with the standard.

Preparation

In preparation of the review, the programme wrote a self-evaluation report in accordance with the VLUHR QA manual for the European Approach for Quality Assurance of Joint Programmes. The panel received the self-evaluation report (including supporting materials) several weeks before the visit of the programme. The panel thoroughly studied the self-evaluation report and its annexes to prepare for the visit.

Prior to the visit, the panel members attended a training session on 9 September 2022. During the training, the panel members received more detailed information on the review and the practical details of how the review process takes place. At the same time, the panel members are instructed on the approach to follow and on the working method. The panel members are also informed about the educational, legal and financial preconditions in which the programme operates. The panel got acquainted with the standards for quality assurance of joint programmes in the EHEA and was informed about how this framework relates to the European Standards and Guidelines (ESG). Also, a first substantive discussion was devoted to the self-evaluation report. Finally, the panel members received training in communication skills that should allow them to review the programme with an appreciative approach.

Visit

The site visit took place at Ghent University. During the site visit, the panel spoke with all those involved in the programme in order to gain insight into the quality of the programme, for example the programme managers, the students, the teachers, the alumni, the professional field and the persons responsible for quality assurance, student guidance and internationalisation (see annex 3). Part of the site visit was dedicated to review the programme-specific infrastructure. The panel was able to review the programme-specific infrastructure of the three programme locations. In order to give students and staff the opportunity to talk confidentially to the panel there was an open consultation. At the end of the site visit, the panel discussed the findings with the programme managers. The programme and the panel entered into a constructive dialogue about these findings. After internal consultation, the panels shared its conclusions and recommendations in an oral reporting session.

Report

Based on the self-evaluation report of the programme and based on on-site interviews, the panel provides a reasoned and substantiated judgement on the quality of the programme as a whole and formulates recommendations for quality improvement where possible. Through this report the panel informs society about its findings.

The panel brings together its findings and recommendations in the present report. The consideration of all positive and critical elements results in an accreditation advice at the end of the report. A summary of the commendations identified by the panel and the recommendations made by the panel is included at the end of the report.

The programme managers of the programme involved were given the opportunity to respond to the draft of the report before it was finalised.

Programme report

Context of the study programme

The International Master of Science in Sustainable and Innovative Natural Resource Management (SINReM) is set up to train students from different backgrounds to become "resource engineers", who can contribute to making the global and European raw materials value chain more sustainable from both a social, environmental as well as economic perspective. SINReM considers this 'value chain approach' as its unique selling point. SINReM is a two year and 120 ECTS credits master programme, jointly organised by Ghent University (Belgium), Technische Universität Bergakademie Freiberg (Germany) and Uppsala University (Sweden). Ghent University is the coordinator of the programme.

The three partner universities claim having complementary backgrounds. Uppsala University intends to deliver extensive knowledge on the exploration of (rare) georesources. It also focuses on innovation management and entrepreneurship training. TU Freiberg intends to offer its proficiency in sustainable and environmentally friendly extraction and processing technologies of metals and mineral raw materials. Ghent University aims to contribute through its expertise in the circular economy, environmental science and technology, recovery of resources from waste, and sustainability assessment. In that way three universities aim to cover the mineral value chain from exploration, mining, and processing, with a circular economy approach and entrepreneurship thinking.

A total of 107 students enrolled in the programme (52 male and 55 female) from 49 countries during five cohorts from 2017 to 2021. So far, the programme has 51% female and 49% male students. Between July 2019 and July 2022, 48 students have graduated a Master in Sustainable and Innovative Natural Resource Management.

SINReM is currently acknowledged as an Erasmus Mundus Joint Master Degree programme and is funded by the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Commission⁴. As an Erasmus Mundus programme, SINReM can award Erasmus Mundus scholarships to its students (35,000 euro for European students and 49,000 euro for non-European students). In 2017, the programme received the EIT Label, a certificate of quality and excellence for educational programmes that are focused on innovation, entrepreneurship, creativity and leadership awarded by the European Institute of Innovation and Technology (EIT). The Label was successfully renewed in 2021. The programme receives funding under the project agreement from the Knowledge and Innovation Community (KIC) EIT RawMaterials.

The governance of the programme is composed of these bodies:

- Joint Management Board: The board is the final responsible, in charge of the overall management of the programme.
- Joint Programme Steering Committee: The committee advises on modifications of the programme contents and monitors in accordance with legal and institutional regulations the courses in terms of success of delivery and grades achieved by students. The committee checks whether all the programme learning outcomes are covered by the learning outcomes of the individual courses. The committee also advises on the grade conversion table, individual study programmes and curricula, selection of elective courses, thesis topics and nomination of lecturers.
- Joint SINReM Examination Committee: Local institutional examination committees are established at each partner university individually, in accordance with the legal and institutional regulations. The Joint SINReM Examination Committee is composed of at least two academic staff members of each partner university. The Joint Examination Committee officially validates the grades at the end of each academic year and proposes the awarding of the final degrees and grades of merit to the local examination committees.
- Student Selection Committee: This committee proposes the selection and ranking of students to the management board.

⁴ project reference 619842-EPP-1-2020-1-BE-EPPKA1-JMD-MOB

Standard 1. Eligibility

1.1 Status

The institutions that offer a joint programme should be recognised as higher education institutions by the relevant authorities of their countries. Their respective national legal frameworks should enable them to participate in the joint programme and, if applicable, to award a joint degree. The institutions awarding the degree(s) should ensure that the degree(s) belong to the higher education degree systems of the countries in which they are based.

The panel evaluates the substandard as compliant.

Ghent University (Belgium), Technische Universität Bergakademie Freiberg (Germany) and Uppsala University (Sweden), the institutions that offer this joint programme, are recognised as higher education institutions by the relevant authorities of their countries. Their respective national legal frameworks enable them to participate in the joint programme. The institutions awarding the degree ensure that the degrees belong to the higher education degree systems of the countries in which they are based. This is proven by legal documents examined by the panel.

The regulation in Flanders (Belgium) states that EU-funded joint master programmes are automatically accredited for the first seven years, followed by this current European Approach for Quality Assurance of Joint Programmes evaluation.⁵ At Ghent University SINReM is currently accredited until September 2023. Therefore, this current evaluation takes place. At TU Bergakademie Freiberg, the university has, by Saxonian law⁶ the full right to award master's degrees. Uppsala University is a recognised state-run independent higher education institution in Sweden and has the right to award master's degrees. The panel was informed by relevant documents that SINReM graduates receive a joint diploma and diploma supplement, signed by all three consortium partners.

1.2 Joint design and delivery

The joint programme should be offered jointly, involving all cooperating institutions in the design and delivery of the programme.

The panel evaluates the substandard as compliant.

The SINReM programme is jointly designed and delivered by three academic partners (Ghent University (Belgium), Technische Universität Bergakademie Freiberg (Germany) and Uppsala University (Sweden)) based on the complementary expertise of these partners.

The panel noted that the jointness of the programme is primarily ensured within the Joint Management Board, with representatives of the consortium partners. The management board is the final responsible, in charge of the overall management of the programme. This includes the final decision on the admission of the students to the programme, the financial management, the quality assurance, individual lectures (e.g., content, relevance, quality of course material, effectiveness in training targeted skills, interaction with the professional sector, etc.), lecturers, composition of the study programme, mobility schedules and issues (e.g. problems with examination and teaching schemes), and facilities provided by the consortium to host students. This makes this management board the central point of debate and decision in the programme.

The management board meets at least three times a year, but it may meet more often, formally or otherwise, in case certain issues arise. In their meeting with the panel, management board members indicated that they hold their meetings physically whenever possible so that they can then also visit each other's teaching locations.

⁵ Codex Higher Education, art. II.151

⁶ Sächsisches Hochschulfreiheitsgesetz, §32 (4)

The panel noted that all universities in the consortium take a proportionate share of the programme, based on the disciplinary strengths of each of the partners. The coordination of the courses is also done in the management board. The panel believes that jointness can be even more intensely underpinned by intensifying procedures such as joint master's thesis supervision and evaluation, joint teaching tasks, and guest professorships. The panel elaborates on this in standard 3.

1.3 Cooperation Agreement

The terms and conditions of the joint programme should be laid down in a cooperation agreement. The agreement should in particular cover the following issues:

- Denomination of the degree(s) awarded in the programme;
- Coordination and responsibilities of the partners involved regarding management and financial organisation (including funding, sharing of costs and income etc.);
- Admission and selection procedures for students;
- Mobility of students and teachers;
- Examination regulations, student assessment methods, recognition of credits and degree awarding procedures in the consortium.

The panel evaluates the substandard as compliant.

The panel received a copy of the programme's consortium agreement. This copy was an updated version of the agreement that was signed by all consortium partners in March 2022. The panel was pleased to know that this consortium agreement is a document that is updated by the universities concerned when needed. The panel examined this consortium agreement thoroughly and concluded that the terms and conditions of the programme are laid down in a sound and clear way.

The cooperation agreement between the partners covers the terms and conditions of their partnership and includes - amongst other things - the denomination of the degree awarded in the programme; coordination and responsibilities of the partners; admission and selection procedures for students; mobility of students and teachers; examination regulations; student assessment methods; recognition of credits; degree awarding procedures; costs and financing; visiting guest lecturers; rules of confidentiality related to thesis and examination as well as personal Data and privacy in the consortium. The agreement also contains a budget calculation for the four student intakes (2021, 2022, 2023 and 2024) of the approved Erasmus Mundus Joint Master Degree (EMJMD) project.

Standard 2. Learning Outcomes

2.1 Level [ESG 1.2]

The intended learning outcomes should align with the corresponding level in the Framework for Qualifications in the European Higher Education Area (FQ-EHEA), as well as the applicable national qualifications framework(s).

The panel evaluates the substandard as compliant.

The programme has a set of 18 intended learning outcomes. These are grouped in nine categories of which six are so-called EIT Overarching Learning Outcomes, that are set by the European Institute for Innovation and Technology (EIT). Covering all EIT learning outcomes is a prerequisite for programmes to receive the EIT Label. That the learning outcomes meet the EIT learning outcomes, on the one hand, and are subsequently a specialisation with its own identity, the panel considers an added value of the programme. In this way, the programme identifies its own uniqueness.

The Flemish Higher Education Council (VLUHR) coordinated the drafting of domain-specific learning outcomes for International Masters of Science in Sustainable and Innovative Natural Resource Management. These domain-specific learning outcomes were approved by VLUHR and validated by the Dutch Flemish Accreditation organisation (NVAO) on 11 February 2019 on the European Qualifications Framework (EQF) level 7. These domain-specific learning outcomes are also the intended learning outcomes of programme. Subsequently, the intended learning outcomes align with EQF level 7 and the Flemish Qualification Framework.

The programme's self-assessment report makes it clear to the panel that the learning outcomes align with the European Qualifications Framework. Nevertheless, the self-assessment report focused mainly on the relationship between the intended learning outcomes and the Flemish Qualifications Framework. While preparing for the site visit, the panel did its own mapping between the intended learning outcomes and the National Qualification Frameworks (NQF) of the degree awarding universities. The panel concludes that the learning outcomes align with the three NQF.

The students and teaching staff who met the panel acknowledge that the intended learning outcomes are known to them and that they are transparent and assessable. They are included on the SINReM website and in the study guide of Ghent University. Students mentioned that the learning outcomes are presented to students during the SINReM Kick Off event at the start of their studies.

2.2 Disciplinary field

The intended learning outcomes should comprise knowledge, skills, and competencies in the respective disciplinary field(s).

The panel evaluates the substandard as compliant.

The SINReM programme and its curriculum were jointly developed by the three academic partners with input of non-academic partners. The courses have been carefully reviewed and selected to minimise repetition and overlap, and to build upon the previously acquired knowledge in a logical sequence, which is not always evident in a programme with mandatory mobility. The teaching requirements and engagement of all three partner universities are balanced and on the same level. Each partner university provides courses focusing on the expertise of these institutions and professors involved.

The panel learned from the management board and supporting documents that the professional field was very much involved in setting up the programme. Various meetings with many representatives of the professional field in the three organising countries and European wide were consulted. It is the panels opinion that this is strongly reflected in the learning outcomes, which are current, international and relevant to the disciplinary field.

Through the system of the aforementioned domain-specific learning outcomes, a minimum test is done in Flanders whether, according to a group of international experts, knowledge, skills, and competencies in the respective disciplinary field are sufficiently present in the learning outcomes. As the learning outcomes of this programme were approved by VLUHR and validated by NVAO, this requirement is met.

The panel received a document containing a comprehensive list of the programme's non-academic partners. The panel was pleased to be informed that due to the involvement of many academic partners of the programme in internships and theses, the programme will set up a non-academic Advisory Board that will be consulted on a yearly basis. The panel supports this action taken by the management board to continue the close links with the professional field.

2.3 Achievement [ESG 1.2]

The programme should be able to demonstrate that the intended learning outcomes are achieved.

The panel evaluates the substandard as compliant.

The panel was given the opportunity to examine a sample of final products of the programme. These included exams, student papers, group work reports and presentations, internship reports and blogs and master's theses. The management board stressed in their meetings with the panel that they dedicate attention to the way the learning outcomes are achieved. Many of the intended learning outcomes are touched upon in multiple courses, allowing growth in acquiring skills and competences for the students. This is also visible in the student surveys, in which students indicate that the programme provides them with sufficient theoretical knowledge, skills, and attitudes from their field.

The panel learned from its meetings with the alumni and based on student and alumni surveys that the programme contributes to their students' personal development and to their career. They indicated that the programme enabled them to acquire the knowledge, skills, and competencies relevant to work in this disciplinary field. Evidence shows that graduates easily get a job related to their field of study. Students' soft skills are also explored during the master's thesis and internship.

The way soft skills are tested in the master's thesis and internship is less explicitly defined. Management board itself indicates that evaluating these soft skills could be brought more strongly into the programme. The panel recommends evaluating these soft skills more explicitly in the master's thesis and internship. This can be done, for example, by explicitly identifying them in the evaluation forms of the internship and the master's thesis.

As mentioned earlier, different learning outcomes are addressed in multiple courses. Before students start the internship and master's thesis, theoretically, all learning outcomes are touched upon. During its meetings with the panel, this led some teaching staff to state that all learning outcomes are already achieved in the first of the two years of the programme. The panel believes that the programme should be cautious in this. The panel recommends the programme to focus on learning paths in which it is clearer to both students and lecturers up to which level an intended learning outcome is achieved in each of the courses.

The quality of the individual master theses, as reflected by the structure, content, and length of the documents provided to the panel, was found of satisfying, generally very good quality. The panel was also impressed that the theses show a very good mixture of the wealth of topics covered in SINReM, spanning from natural sciences to economy, technology and policymaking/law. From talking to the alumni but also the professional field representatives the panel learned that a significant number of students found employment with the company or institution where the thesis was carried out - an indirect proof that the research work done is of high value.

Student surveys indicate that 20% of the students are not satisfied with the acquired skills and knowledge during their internship. The management board thinks that this is due to new internship companies that are selected by the students themselves. If this is the case, the management board needs to monitor the quality of internships

more closely. A better follow up of the companies on the internship list could facilitate the students better in finding a qualitative internship. Currently the management board tries to solve this issue by asking students to post their experiences during their internship in a weekly blog post, which allows intervention by teaching staff in case of problems. Nevertheless, the panel recommends that new companies for internship would be reviewed and that multiple negative reviews lead to a ban of the company.

The panel notes that in the frame of the EIT Label renewal application in 2021, an analysis was performed on if and how the intended learning outcomes were achieved by graduates. Student work samples from all partner universities were collected and analysed for all mandatory courses to illustrate that intended learning outcomes are achieved.

2.4 Regulated Professions

If relevant for the specific joint programme, the minimum agreed training conditions specified in the European Union Directive 2005/36/EC, or relevant common trainings frameworks established under the Directive, should be taken into account.

The minimum agreed training conditions specified in the European Union Directive 2005/36/EC, or relevant common trainings frameworks established under the Directive, are not relevant to this programme.

Standard 3. Study Programme [ESG 1.2]

3.1 Curriculum

The structure and content of the curriculum should be fit to enable the students to achieve the intended learning outcomes.

The panel evaluates the substandard as compliant.

The panel examined the curriculum thoroughly. The ECTS files are clear and distributed properly. The structure of the programme enables students to demonstrate the learning outcomes. The Programme Steering Commission advises on professional relevance of course contents, and on the way intended learning outcomes are effectively acquired by the students.

The programme's curriculum spans two academic years and is based on student mobility, with students taking the various courses at different training locations. At the start of the programme, students attend a three-week course 'Problems and Innovations in the Process Chain of Mineral Resources' at TU Freiberg (4 ECTS), wherein they are taken through the entire raw materials value chain. This includes a visit to the TU Freiberg research mine, research departments operating demonstrator and pilot plants, excursions to companies and discussions with founders of start-ups. The course aims for the students to have a clear picture of all processing steps before gaining more detailed and theoretical knowledge in the subsequent courses. Moreover, one week of this course in Freiberg is also used to refresh and upgrade knowledge of chemistry to the required level. This was previously identified as a need to bring the students from different educational backgrounds to the appropriate level in basic skills and knowledge. The panel learned from the students that this is a good start for the student group to get to know each other and bring them on the same level. The diverse range of working methods in this course contributes to this, according to the panel.

During the first semester at Ghent University (22 ECTS), students learn about materials cycles and the value chain, sustainability, management of natural resources, the circular economy, economics, policy and legislation. They are trained in rational use of materials, clean technology and life cycle assessment methods used to assess the sustainability of materials and production processes. The panel supports that some of the courses include contributions of the non-academic sector.

During the second semester of the first year-students go to Uppsala University (25 ECTS). They focus on techniques used for georesource exploration. In the Raw Materials Network Seminar case studies from non-academic organizations are discussed in terms of socio-cultural and sustainability perspectives. During the summer, students have to go back to TU Freiberg for a Resources Chemistry course (9 ECTS). This course is built around lab classes, some of which allow students to operate pilot plants. It is completed by a guest lecture series from industry partners, excursions to companies and case studies provided by industry partners and research departments. Students work in small groups on technological aspects of their case studies. After the Resources Chemistry course, students take the mandatory course Literature Study and Business Plan (5 ECTS), an online course organised by TU Freiberg at the beginning of the second academic year. This course prepares the students for the master's thesis work and helps them develop problem-solving, project management and business plan development skills, which are considered essential for their future career.

In the second year the students further specialise in a particular field and choose one of the five majors (15 ECTS): Georesource exploration (Uppsala University), Sustainable entrepreneurship (Uppsala University), Sustainable processes (TU Freiberg), Resource recovery and sustainable materials (Ghent University) and Circular societies (Ghent University).

Next to choosing a major, students conduct their master thesis (30 ECTS) in close collaboration with and/or inside a company or non-academic organisation, under academic supervision of a consortium partner. Furthermore, all students conduct a mandatory internship (10 ECTS) in a non-academic environment, always

under supervision of one of the consortium partners. The internship is performed during the summer between the first and second year, or during the second year.

The internship and master's theses are seen as a high added value by students. Recently the management board decided to appoint an internship tutor in every university of the consortium. This tutor is a point of contact for students and they read the weekly student's blogs (see standard 2.3.). The panel appreciates this initiative. Nevertheless, a stronger tie between these tutors and the companies would be beneficial. Currently, contacts with the internship supervisor in the company are rather minimal. Supervision of internship supervisors is also very limited. The panel recommends that internship supervisors be more strongly instructed on what to expect from students, how to supervise students and what feedback is expected from the internship supervisor in terms of the learning outcomes to be achieved. Panel recommends to establish e-learning materials for the internship supervisors, so that they can better align with the internship requirements. The need to structurally strengthen links with companies offering internships could be identified by the fact that the lists of contacts in those companies are not up to date. The panel suggest tightening the links with industry.

As mainly the students are mobile, the jointness of the programme is not expressed through interactivity between the teaching staff from the three locations. The panel discusses this further in standard 5 and 7. However, the programme is trying to take some initiatives to intensify the jointness of the programme also in terms of other joint collaborations. Recently, internships are jointly supervised by TU Freiberg and Ghent University. Joint thesis topics, co-supervised by teaching staff from the different universities, and collaborations between students following the Sustainable Entrepreneurship major and those following the other majors are also being established. The panel believes this is a great added value as the reinforced commitment to multi- and interdisciplinarity will strengthen the jointness of the programme. Furthermore, joint courses have been set up and are still being further developed with associated non-European SINReM partners. For example, visiting scholars from the University of Witwatersrand (South Africa) have been involved in developing two joint courses running at Uppsala University focused on georesource exploration.

3.2 Credits

The European Credit Transfer System (ECTS) should be applied properly and the distribution of credits should be clear.

The panel evaluates the substandard as compliant.

The SINReM programme is a 120 ECTS credits programme. All consortium partners apply ECTS. One ECTS credit is equal to 25-30 hours of study. The panel notes that the ECTS system is applied properly. The programme website gives a clear and up to date overview of the ECTS distribution: <https://sinrem.eu/programme/>

After every examination session, the partner universities report the obtained exam grades in the local grading system to the Coordination Secretariat. The coordination secretariat uses an unambiguous grade conversion table to convert the grades from the partner universities to the 20 points grading system used at Ghent University, the coordinating university. The panel elaborates on the latter in standard 5.

3.3 Workload

A joint bachelor programme will typically amount to a total student workload of 180-240 ECTS-credits; a joint master programme will typically amount to 90-120 ECTS-credits and should not be less than 60 ECTS-credits at second cycle level (credit ranges according to the FQ-EHEA); for joint doctorates there is no credit range specified.

The workload and the average time to complete the programme should be monitored.

The panel evaluates the substandard as compliant.

The programme is a 120 ECTS-credits programme. It is designed to be completed in two years. The panel discussed the workload of the programme throughout the whole site visit. Students describe this workload as quite high in the first semester in Ghent. Various explanations are given by students and alumni to explain the high workload. The answer to whether the workload is doable and acceptable also varies from student to student. Some attribute it to the culture shock of suddenly ending up in another country, in a semester where a lot of travelling is required.

The panel learned the workload of the programme is overall evenly distributed between the semesters and considered as doable by students the panel met and according to student surveys. The only exception to this is the first semester where the students indicate that the workload is too high due to time consuming presentations, project reports combined with tight deadlines at the Ghent University. Students testify that multiple deadlines are planned on the same week or even on the same day. Because the workload is more balanced at the programme's other locations, students are less interested in coming back to Ghent in their major.

To ensure a better planning of deadlines and maintain an overview for the students, the management board is planning to collect all the deadlines at the start of the semester. This will allow them to rearrange deadlines on the same day and allow for more evenly planned deadlines. Then the overview will be given to the students so they can plan more towards the deadlines and will be less surprised by these deadlines. The management board brings new students in contact with senior students and alumni during the Kick off event to share advice to ensure the first-year students are better prepared for the high workload. While this will help the programme respond to student concerns, the programme still puts the responsibility on the student. The panel therefore recommends that the programme conducts study time measurements to get an objective view on the workload and, if necessary, adjust the programme accordingly.

Currently there is an overlap between the moment courses in TU Freiberg are organised and the time other courses start at Ghent University. The first three weeks at the start of the programme in Freiberg should be meant as a help for the students to get familiar with the programme and with each other and to bring all to the same level of knowledge and skills. However, it is more often felt to be too intense, in combination with the expectations that are already set on location Ghent afterwards. The management board is aware of the problem and partly attributed this problem to additional circumstances such as cultural differences, students not being used to the Ghent University system and Covid restrictions. The panel recommends solving this problem soon and thoroughly as this causes additional workload for students that are not able to follow the first lectures of some courses. The panel suggest - as a temporary solution - the programme can also reflect on making some Ghent University courses hybrid to enable students to participate or record courses to give students the time to follow the courses at their own pace. The panel learned that the management board will reduce the period that students have to follow courses in Freiberg and Ghent at the same time to one week and will offer catch-up lectures. The panel considers this as a temporarily solution as a joint programme should ensure there is no overlap between different locations. The panel believes that from a student-centred approach, the programme should rethink its first semester, in order to achieve a better balance.

Standard 4. Admission and Recognition [ESG 1.4]

4.1. Admission

The admission requirements and selection procedures should be appropriate in light of the programme's level and discipline.

The panel evaluates the substandard as compliant.

Each year, more than 650 applicants apply for the programme. Around 35 scholarships (Erasmus Mundus and EIT AVSA scholarships) can be awarded. The panel notes this makes the selection procedure for a scholarship very competitive. The panel learned from students that the programme is particularly attractive for students that want to stay in Europe after completing their studies. The management board acknowledges the programme is highly attractive partially because the ERASMUS mundus and EIT AVSA scholarships.

In order to be granted academic admission for the programme as a self-funding student, applicants must hold a Bachelor degree (equivalent to at 180 ECTS) in a discipline closely related to the SINReM scope; have a strong background in science (equivalent to at least 15 ECTS in mathematics and/or physics and 10 ECTS in chemistry); have completed their previous degree(s) with very good or excellent grades (typically top 30% of the students); submit a convincing motivation letter, which shows that the SINReM scope matches their previous education and future goals and fulfil the English language requirements.

The total sum of all subscores of the above-mentioned criteria is used to rank all candidates in order to award academic admission and scholarships by the SINReM Student Selection Committee during a meeting in March. The committee also takes gender balance and geographical balance into consideration while nominating students for scholarships. The panel examined the profiles of incoming students. The panel commends the diversity of the students: The programme has a good gender balance and a good geographical balance. The whole procedure for admissions is described in a clear way.

The panel noted with satisfaction that the programme's website provides a very clear overview of the admission requirements. Students the panel met also testified that all relevant information is easily accessible on the website. For example, all relevant dates for admission are clearly listed on the website as well as detailed information on English proficiency. Clear information on the legalisation of a diploma and on feedback and appeals is also available on the website. As this is a very internationally oriented programme, the panel learned that students from diverse backgrounds may sometimes interpret the offered information differently. Nevertheless, the panel encourages the management board to play a more proactive role in monitoring students during the application process until the Kick off of the programme.

In some countries it takes some months before students receive an official diploma. The panel supports that flexibility is shown to students that graduate later than the admission date for SINReM as they can present a certificate with proof of graduation instead of their official diploma. Some students mentioned to the panel that difficulties arise when certificates with proof of obtained entry diploma are issued too late by certain universities. The panel finds it unfortunate, but understandable, that students on their regular path towards a bachelor's degree in summer of a given year (i.e. their third year) cannot seamlessly move into the SINReM programme because of the admission deadlines earlier that year, at least if they want to apply for an Erasmus Mundus scholarship.

4.2. Recognition

Recognition of qualifications and of periods of studies (including recognition of prior learning) should be applied in line with the Lisbon Recognition Convention and subsidiary documents.

The panel evaluates the substandard as compliant.

The programme's consortium agreement indicates that it follows the Lisbon Recognition Convention. This guarantees fair recognition of academic qualifications. For admission applications on the basis of a diploma issued in a country that ratified the Lisbon Recognition Convention, the principles of this convention will be honoured by the programme. The candidates need to meet the local eligibility requirements for admission (see standard 5.1.) of the partner universities.

Standard 5. Learning, Teaching and Assessment [ESG 1.3]

5.1 Learning and teaching

The programme should be designed to correspond with the intended learning outcomes, and the learning and teaching approaches applied should be adequate to achieve those. The diversity of students and their needs should be respected and attended to, especially in view of potential different cultural backgrounds of the students.

The panel evaluates the substandard as compliant.

The panel learned from the SER and from its meetings with the management board that the programme intends to train students towards becoming “resource engineers”, who can contribute to making products, industrial production processes or services more sustainable. The programme aims at tackling challenges from a raw materials value chain perspective, taking into account the big socio-economic challenges of sustainability and the circular economy. Therefore, the management board aims to have learning and teaching methods that encourage the development of a critical, autonomous and rational thinking, and also promote leadership, innovation, creativity, (stakeholder) communication, entrepreneurial and intercultural skills.

The panel did a thorough scrutiny of the learning and teaching methods. They found that most courses include activating group assignments and discussions and/or lab work. Field trips are organised and microteaching is integrated in several courses. Students informed the panel that during in-class teaching, students are also regularly invited by the lecturer to share their opinions, e.g. using think-pair-share strategies. During live online sessions, activating tools such as breakout rooms for group discussions are used regularly. Self-paced online modules make use of online learning paths integrating activating tools in between short video lectures, such as quizzes, short reading assignments, calculation exercises and blackboards/forums enabling students to share information, opinions and ideas, and to make value judgements and acquire a global vision of economic, environmental and societal problems. Some of these working methods require students to work intensively with each other. The panel learned from its discussions with the students that this strengthens cohesion within the student group. The students find the teaching methods of the courses at the Ghent University rigorous. Students have few opportunities to help shaping courses on this campus. The panel recommends that the Ghent University should guide the teaching staff to become more student-centred in their course design.

As already discussed in standard 3, students receive an initial set of courses in Freiberg at the start of their programme with the aim of having the same level of basic knowledge and competences to all students. In addition, the introductory period in Freiberg serves to get familiar with each other and with the programme. Members of the three universities' management board are also present to engage in dialogue with the students.

During its meetings with the various stakeholders and especially the students, it became clear to the panel that the individual lecturers take into account the diverse backgrounds of the students in their courses. Moreover, this is part of the course design where the programme is aiming at this diverse group of students. The panel appreciates that teaching staff is playing an important role in adapting to students' needs. When it comes to design of the programme as a whole, students are less in the centre. Regardless of the diversity of learning and teaching approaches present in the programme, the panel notes that the programme could put more effort into student-centred learning. Currently, choices are strongly made from a three-campus model. Teaching staff does not communicate programme-wide with each other about the teaching and learning methods used. For example, each of the locations has its own policy in dealing with supervision (and evaluation) of master's theses. The panel believes that the programme should achieve greater alignment and uniformity stimulating the jointness of the programme. A more joint approach for the teaching staff at the different universities in which they can discuss their teaching methods and their student interactions could lead to better understanding of the differences between the different universities. This might them to learn from each other strengths and weaknesses (see also standard 7). The panel thinks that more joint actions such as joint courses can grow naturally out of interventions between the teaching staff from the different universities.

5.2 Assessment of students

The examination regulations and the assessment of the achieved learning outcomes should correspond with the intended learning outcomes. They should be applied consistently among partner institutions.

The panel evaluates the substandard as compliant.

The programme has for every partner university a different Education and Examination Code. Each code applies to the university a student takes the concerned courses and exams. As a result, different partner universities also use different grading systems. After every examination session, the partner universities report the obtained exam grades in the local grading system to the Ghent University coordination secretariat.

The secretariat uses an unambiguous grade conversion table to convert the grades from the partner universities to the 20 points grading system used at Ghent University, the coordinating university. The grade conversion table contains a detailed rubric and is shared with the panel and discussed during the site visit. The panel learned that the table can be adapted by the Joint Examination Committee, after approval of the management board, before every new student intake. Students testify that at all partner universities, the grading system used in the course is explained by the responsible lecturers during the first classes of each course. Moreover, it is included in the ECTS file, which is available to the students on the website. The panel thinks this is a good pragmatic solution to deal with the differences.

The panel was glad to know that to ensure consistency in the grading of internships and master theses of all students, independent of where they follow their major during the second year, joint grading criteria for evaluation of internships and master theses were developed by the management board. The jointly developed grading criteria for evaluation of internships and theses are explained during the Kick-off by the internship and programme coordinator and shared to the students via the digital learning platforms of the partners. As mentioned in standard 2, more attention can be paid to explicitly testing soft skills in the internship and master's thesis.

The programme uses a broad variety of assessment methods to ensure graduates achieve the intended learning outcomes, in line with the used learning and teaching methods. Based on the ECTS files, the panel notes a diversity of examinations methods. As with teaching and learning methods, this diversity certainly contributes to achieving the intended learning outcomes for each the courses, according to the panel. Nevertheless, the jointness of assessments can be enhanced. Teaching staff from different locations never discuss amongst each other the assessment methods. The panel recommends bringing staff from the three partner institutions together to learn from each other to learn about the different ways of teaching and examination. Teaching staff should be more aware of each other's different approaches and can learn from that.

Students and teaching staff told the panel that feedback is part of the assessment procedure. Students feel free to ask for feedback. Teaching staff indicate they feel pressure to give sufficient feedback on the assignments. The panel learned from the management board that they stimulate the teaching staff to give sufficient feedback.

Standard 6. Student Support [ESG 1.6]

The student support services should contribute to the achievement of the intended learning outcomes. They should take into account specific challenges of mobile students.

The panel evaluates the substandard as compliant.

The programme has a coordination secretariat that acts as a liaison between the management board and the students. The panel learned from its meetings with the students that it is communicated that this secretariat is the single point of contact for all administrative and practical questions. The coordination secretariat is embedded in the International Training Centre of the Faculty of Bioscience Engineering of Ghent University. The secretariat treats all administrative questions and problems and is in charge of relevant practical matters such as arrival of students, mobility arrangements, collecting the grades of students, organisation of thesis and internship activities, communication and dissemination and alumni follow-up. The panel had a meeting with representatives from the coordination secretariat and from the local secretariats. These local secretariats also assist students with housing, arrival, visa, registration, mobility arrangements, selection of elective courses and incorporation in the local student body. The panel supports the newly established online platform to interconnect students and alumni. This allows students and graduates to share experiences for instance about internship.

At the start of the programme, all students receive the yearly updated Student Handbook which contains all practical information about the programme, including access to student counselling, student psychologists and medical doctors. The panel acknowledges there is student support available if the students are assertive enough to ask for it. However, the management board should take into account that especially during the first semester the whole experience can be overwhelming and that not all students are yet as assertive as need be for this programme. One ombuds as point of contact and confidant for all locations might solve this problem. Students reported to the panel for instance some financial pressure because they have a grant for only 24 months.

In terms of visas, students are supported by the programme. Still, the panel heard that the whole procedure is a stressful and often bureaucratic affair for the students to get this right for the 3 different countries where part of the programme takes place. The management board agrees that, depending on the country of origin and the country of destination, it is sometimes complex to have a visa in time to start the programme.

The students met by the panel reported that it is difficult to find housing. This is mainly because of local administrative rules and the housing market. For students it is especially not easy to find adequate housing for the short periods that students stay at each of the programme's locations. As the students go all together to Freiberg in their first three weeks, their travel and housing for this three-week block is organised by the management board. Students complain that in Freiberg, building works were carried out on the building while they were living there. The management board indicates that this is because students from this programme start the academic year earlier than regular students from other programmes. However, the panel believes that the management board and the university concerned should make every effort so that students from this programme can also have decent housing without works ongoing.

The management board indicated to the panel that if the students need housing support, the students must be assertive and ask for it themselves. However not all students are assertive by nature, and maybe more should be done to ensure that also the non-assertive students receive support if needed. For example, in Uppsala University, the housing of the students is monitored and if they miss the application deadline a last warning email is sent.

Currently, students need 3 different mailing addresses and have 8 different online platforms, which was despite the detailed explanation in the student manual, very overwhelming and complex. The panel recommends that the management board together with the local organizers explores how this may be simplified in the future.

All in all, the programme has support services that come into operation at the request of the students. However, optimisation is possible by working more proactively, student-centred and joint.

Standard 7. Resources [ESG 1.5 & 1.6]

7.1 Staff

The staff should be sufficient and adequate (qualifications, professional and international experience) to implement the study programme.

The panel evaluates the substandard as compliant.

Every year, international experts affiliated with the programme are invited to teach at the three partner universities. The panel received detailed CVs of teaching staff in the programme prior to the site visit. On this basis, it is clear to the panel that the programme succeeds in bringing together experts in their fields. The panel identified the high quality of the staff as one of the programme's greatest strengths. The staff is experienced to implement the study programme sufficiently and adequately.

As already mentioned in standard 5, the panel regrets the limited collaboration between individual teaching staff. Interaction among teaching staff regarding good practices for teaching, learning and assessment methods would enhance the jointness and student centredness of the programme.

7.2 Facilities

The facilities provided should be sufficient and adequate in view of the intended learning outcomes.

The panel evaluates the substandard as compliant.

As the site visit took place at the Ghent University location, the panel did not physically visit the other locations. Nevertheless, the panel got a comprehensive insight into the facilities available at the different locations based on the SER and meetings with various stakeholders. Also, during a site visit, a time slot was set aside during which the members of the management board of all the programme locations gave a detailed explanation based on visual material. At all SINReM partner universities' lecture halls, well equipped seminar rooms as well as central and Faculty libraries are at the students' disposal. Students also showed great satisfaction with the teaching rooms and workspaces.

Two aspects that deserve attention from management board, but which have been covered earlier in this report, are the large number of digital platforms students are required to use. In addition, adequate housing of students remains a point of attention.

Standard 8. Transparency and Documentation [ESG 1.8]

Relevant information about the programme like admission requirements and procedures, course catalogue, examination and assessment procedures etc. should be well documented and published by taking into account specific needs of mobile students.

The panel evaluates the substandard as compliant.

The programme has a website: www.sinrem.eu. All relevant information regarding the programme can be found here. Students will find on the website all information on admission requirements, learning outcomes and a detailed overview of the programme. Students can consult the ECTS files for each of the courses. This allows them to know immediately what the learning outcomes per course are and what the teaching, learning and assessment methods are for each course. The panel commends the clear way information is provided on the website.

Students receive a very detailed student handbook. This handbook covers all necessary steps the students should take (including for application of housing and mobility). Even so, the management structure is explained, information on teaching, learning and assessment as well as information on complaints and appeals. The panel finds the information about the programme very well documented and transparent.

One concern was raised earlier in this report: students have three separate email addresses and eight platforms for learning and administrative procedures, which makes streamlined follow-up communication less evident and does not reflect a student-centred approach.

Standard 9. Quality Assurance [ESG 1.1 & part 1]

The cooperating institutions should apply joint internal quality assurance processes in accordance with part one of the ESG.

The panel evaluates the substandard as compliant.

The management board delegates the responsibility on joint quality assurance on programme level to the Programme Steering Committee. This committee meets at least three times per year. They advise on modifications of the programme contents and monitor in accordance with legal and institutional regulations the courses in terms of success of delivery and grades achieved by students. They check, by means of a competence matrix, whether all the programme end competences are covered by the end competences of the individual courses. The committee also advises on the grade conversion table, individual study programmes and curricula, selection of elective courses, thesis topics and nomination of lecturers.

The panel believes that the central element in common quality assurance in the programme is the annual survey taken from both first- and second-year students to evaluate their appreciation about the programme and its different components. The results of the survey are analysed by the student representatives and the management board prior to this Programme Steering Committee meeting. The results are discussed during the meeting and actions are proposed to improve potential issues. Based on the interviews and documents, the panel was able to establish that the programme is taking actions based on the findings in the survey and subsequent discussions.

The evaluation of each individual course, however, is the primary competence of the individual organising institution. Indeed, each university applies its own internal quality assurance system to the courses it organises. The results at the level of each course are not systematically provided to the PSC or management board. However, management board indicates that if there are problems, the representatives of a university also discuss this in management board anyway and this then comes out of the survey organised at programme level.

The panel notices that the way quality assurance is carried out within the programme is a combination of structural joint quality assurance combined with institution-based quality assurance mechanisms. In their meetings with the panel, both students and alumni mention that this working method is efficient and effective. Students mention that they feel involved in the feedback on the curriculum and the programme as a whole. They feel that all pain points they report to management board are taken into consideration. For example, a course that students indicated had structural problems was replaced in the curriculum. Other issues raised by the students do not have an immediate solution as the programme is organised at three different locations.

It is the panel's opinion that the quality assurance cycle can be strengthened by organising peer review between teaching staff from different locations. Currently, the quality assurance cycle focuses heavily on management board reflections, mainly based on student feedback. A more inclusive approach to quality assurance could further strengthen the jointness of the programme.

Final judgement of the assessment panel

<i>Standard 1 - Eligibility</i>	
1.1 Status	Compliant
1.2 Joint design and delivery	Compliant
1.3 Cooperation Agreement	Compliant
<i>Standard 2. Learning Outcomes</i>	Compliant
2.1 Level [ESG 1.2]	Compliant
2.2 Disciplinary field	Compliant
2.3 Achievement [ESG 1.2]	Compliant
2.4 Regulated Professions	N/A
<i>Standard 3. Study Programme [ESG 1.2]</i>	
3.1 Curriculum	Compliant
3.2 Credits	Compliant
3.3 Workload	Compliant
<i>Standard 4. Admission and Recognition [ESG 1.4]</i>	
4.1. Admission	Compliant
4.2. Recognition	Compliant
<i>Standard 5. Learning, Teaching and Assessment [ESG 1.3]</i>	
5.1 Learning and teaching	Compliant
5.2 Assessment of students	Compliant
<i>Standard 6. Student Support [ESG 1.6]</i>	Compliant
<i>Standard 7. Resources [ESG 1.5 & 1.6]</i>	
7.1 Staff	Compliant
7.2 Facilities	Compliant
<i>Standard 8. Transparency and Documentation [ESG 1.8]</i>	Compliant
<i>Standard 9. Quality Assurance [ESG 1.1 & part 1]</i>	Compliant

As all the standards are evaluated as compliant, the panel is convinced that International Master of Science in Sustainable and Innovative Natural Resource Management (SINReM) is compliant. The panel advises the competent accreditation organisations to grant the accreditation.

Summary of the commendations

Standard 2

The learning outcomes meet the EIT learning outcomes but have also a unique identity.

The programme and its curriculum are jointly developed by the academic partners with input of non-academic partners.

The theses show a very good mixture of the wealth of topics covered in the programme.

Standard 3

The courses include contributions of the non-academic sector.

Internships are jointly supervised by TU Freiberg and Ghent University. Joint thesis topics, co-supervised by teaching staff from the different universities, and collaborations between students following the Sustainable Entrepreneurship major and those following the other majors are also being established.

The programme website gives a clear and up to date overview of the ECTS distribution.

Standard 4

Attention is paid to diversity of the students: The programme has a good gender balance and a good geographical balance. The whole procedure for admissions is described in a clear way.

The programme's website provides a very clear overview of the admission requirements.

Standard 7

The programme succeeds in bringing together experts in their fields. The high quality of the staff is one of the programme's greatest strengths.

Students show great satisfaction with the teaching rooms and workspaces.

Standard 8

Information is provided in a very clear way on the website. The information about the programme very well documented and transparent.

Summary of the recommendations

Standard 2

Evaluate soft skills more explicitly in the master's thesis and internship. This can be done, for example, by explicitly identifying them in the evaluation forms of the internship and the master's thesis.

Focus on learning paths in which it is made clear to both students and lecturers up to which level an intended learning outcome is achieved in each of the courses.

Closely monitor the quality of internships. A better follow up of the companies on the internship list could facilitate the students better in finding a qualitative internship. Review new companies for internship and ban them after multiple negative reviews.

Standard 3

Examine student's perception of the current unbalance between the five majors.

Establish a stronger tie between internship tutors and the companies.

Instruct internship supervisors more strongly on what to expect from students, how to supervise students and what feedback is expected from the internship supervisor in terms of the learning outcomes to be achieved. Establish e-learning materials for the internship supervisors, so that they can better align with the internship requirements.

Conduct study time measurements to get an objective view on the workload and, if necessary, adjust the programme accordingly.

Solve the overlap between the time students spend in Freiberg and Ghent.

Standard 5

Guide the teaching staff to become more student-centred in their course design.

Achieve greater alignment and uniformity stimulating the jointness of the programme. A more joint approach for the teaching staff at the different universities in which they can discuss their teaching methods and their student interactions could lead to better understanding of the differences between the different universities. Bring staff from the three partner institutions together to learn from each other to learn about the different ways of teaching and examination.

Standard 6

Take into account that especially during the first semester the whole experience can be overwhelming and that not all students are yet as assertive as need be for this programme. One ombuds as point of contact and confidant for all locations might solve this problem.

Make sure that students have decent housing.

Try to minimise the use of various platforms at the three locations to help the students to focus on learning outcomes instead of bureaucracy.

Standard 9

Strengthen the quality assurance cycle by organising peer review between teaching staff from different locations.

Annexes

Annex 1: Administrative details of the programme

Name of the institution	Coordinating institution: Ghent University Partners: TU Bergakademie Freiberg Uppsala University
Address, phone, e-mail, institution website	Ghent University Sint-Pietersnieuwstraat 25 9000 Gent T 09 331 01 01 info@ugent.be www.ugent.be
Name, function, phone and e-mail of the contact person	Aaron Plovie Administrative and technical coordinator SINReM T 09 264 60 23 aaron.plovie@ugent.be
Name of the programme (degree, qualification)	International Master in Sustainable and Innovative Natural Resource Management (SINReM)
Tracks	Georesource exploration (Uppsala University) Sustainable entrepreneurship (Uppsala University) Sustainable processes (TU Bergakademie Freiberg) Resource recovery and sustainable materials (Ghent University) Circular societies (Ghent University)
Level and orientation	Master level
(Parts of) field(s) of study	Applied sciences, Applied biosciences
Language of instruction	English
The location where the programme is organised	Ghent, Freiberg, Uppsala
Study load (in ECTS)	180

Annex 2: Short CV panel members

Veiko Karu, Phd is a researcher, project lead and entrepreneurship enthusiast at Tallinn University of Technology (TalTech). His educational background is in applied geology and mining engineering; he is been in academia since 2005. From 2015 he is the main contact for the TalTech for the EIT Raw Materials network. Currently, he is the head of the Mining and Mineral Technology Division (TalTech) and a member of the Society of Mining Professors (since 2008). He also collaborates with companies and non-academic institutions. His experience in international projects and cooperation (Horizon 2020; INTERREG, etc) with a system thinking approach is valuable when building business cases (research; development; international courses) for a circular economy in the raw materials sector. Veiko research interest and technical competencies include mining engineering and design, mineral economics, mining environmental impact and remediation, mine waste management, circular economic and social sustainability, quantitative resource evaluation, and ESG management.

Kathleen Van Heule is senior staff member at the International Office of HOGENT University of Applied Sciences and Arts since 2000. Before she worked for 10 years as a researcher at the Department of Educational Studies at Ghent University. Kathleen holds a degree in Psychology and Pedagogical Sciences, majoring in pedagogy, and holds the scientific degree of Teacher for teaching in higher secondary education for the subjects of psychology and educational sciences. In September 2022 she graduated as Master of Arts in Gender and Diversity. Kathleen has spent over 30 years in internationalization of higher education and participated in various organizations in this domain. She was vice-president of Flanders Knowledge Area vzw (2013-2017) and former member of the EAIE Board (2012-2014). As a staff member at the HOGENT's International Office and coordinator in the U!REKA alliance, she is well acquainted with the European higher education landscape and quality criteria for international cooperation.

Achim Kopf is professor in marine geotechnics at MARUM, University of Bremen, Germany. He is a marine geologist with a long record of ocean drilling science, with broad interest in complex Earth system processes. At MARUM Bremen, he runs a large geotechnical laboratory, and designs and builds seagoing in situ probes and long-term installations (water column, seafloor and boreholes). Achim Kopf provided two decades of teaching to a mainly international target audience in both undergraduate and graduate courses in applied geosciences. He organised teaching as Dean of the Geosciences Faculty at University Bremen. Kopf received the Hans-Cloos-Award by the German Geological Union for his work at the boundary between the Earth's interior and exterior. In his recent projects, he studied serpentinite volcanism in the deep Marianas Trench, built and installed borehole observing systems offshore Japan, and developed instruments to remove CO₂ in the upper ocean crust south of Iceland. He sailed >20 expeditions, many as chief scientist, and has >140 international publications, the majority of them peer-reviewed.

Mara De Bruyn is a student who graduated last year as a bioscience engineer at the faculty of the KULeuven with a mayor of environmental technology and a minor as environmental coordinator. She is currently pursuing an additional master's in management at the KULeuven. During this master she is the year representative of her year for the educational board of the faculty of economics. She is also part of the LOKO student union in which she fulfils the role of corporate relationships manager.

Annex 3: Visit schedule

11 October 2022

start	end	
9:00	11:30	internal consultation
11:30	13:00	programme management
13:00	14:00	lunch
14:00	15:00	students
15:00	15:30	internal consultation
15:30	16:30	teaching staff
16:30	17:30	programme-specific infrastructure
17:30	18:15	internal consultation
18:15	19:15	alumni and professional field
19:15		diner panel

12 October 2022

start	end	
9:00	10:00	supporting staff
10:00	11:00	open consultation
11:00	13:00	internal consultation + lunch
13:00	14:30	programme management
14:30	15:30	final consideration
15:30	16:00	oral report

Annex 4: Overview of consulted documents

Self-evaluation report

Annexes to the self-evaluation report

- Annex 1: SINReM joint diploma
- Annex 2: Letter accreditation Uppsala University
- Annex 3: SINReM Consortium Agreement
- Annex 4: SINReM ILO coverage matrix
- Annex 5: Manual for SINReM Student Selection Committee members
- Annex 6: SINReM students cohorts
- Annex 7a SINREM Internship Grading Criteria and Guidelines
- Annex 7b SINREM Thesis Grading Criteria and Guidelines
- Annex 8: SINReM Student Handbook
- Annex 9: CVs SINReM key staff members
- Annex 10: SINReM non-academic partners
- Annex 11a: Results of the SINReM student survey of cohort 2018 about their second academic year 2019-20
- Annex 11b: Results of the SINReM student survey of cohort 2019 about their first academic year 2019-2020
- Annex 11c: Results of the SINReM student survey of cohort 2020 about their first academic year 2020-2021
- Annex 11d: Results of the SINReM student survey of cohort 2019 about their second academic year 2020-2021
- Annex 12: Results of the Ghent University SINReM programme evaluations taken from the SINReM cohorts 2018 and 2019

A sample of study materials

A sample of evaluation sheets

A sample of master's theses

A presentation of the programme's facilities.