

Programme-specific part of the Education and Examination Regulations 2022-2023

Graduate School of Geosciences: Master's degree programme in Science & Innovation

The Master's degree programme *Science & Innovation* offers the programmes *Innovation Sciences* and *Sustainable Business and Innovation*.

Art. 2.1 – Admission requirements

1. The following conditions for admission apply:

Admission to the **Innovation Sciences** programme is granted to students with a Dutch or foreign diploma confirming that they have acquired the knowledge, insight and skills at the university Bachelor's level.

Furthermore, students need to prove that they have gained the following specific knowledge, insight and skills:

- a) knowledge in the field of *Science and Innovation Management, Natural Sciences* or *Life Sciences* at the advanced level of the major *Science and Innovation Management, Natural Sciences* or *Life Sciences* at Utrecht University (or equivalent to that level)
- b) knowledge of emerging technology issues and complex multidisciplinary problems
- c) insight into *Science and Innovation Management, Natural Sciences* or *Life Sciences* at the advanced level of the major *Science and Innovation Management, Natural Sciences* or *Life Sciences* at Utrecht University (or equivalent to that level)
- d) academic and research skills at the advanced level of the major *Science and Innovation Management, Natural Sciences* or *Life Sciences* at Utrecht University (or equivalent to that level)

Admission to the **Sustainable Business and Innovation** programme is granted to students with a Dutch or foreign diploma confirming that they have acquired the knowledge, insight and skills at the university Bachelor's level. Furthermore, students need to prove that they have gained the following specific knowledge, insight and skills:

- a) knowledge in the field of *Science and Innovation Management, Environmental Sciences, Environmental Studies* or *Economics* at the advanced level of the major *Science and Innovation Management, Environmental Sciences, Environmental Studies* or *Economics* at Utrecht University (or equivalent to that level)
- b) knowledge of sustainable development and innovation sciences
- c) basic knowledge of natural sciences at Bachelor's level, including *Mathematics* and/or *Chemistry* and/or *Physics*
- d) insight into *Science and Innovation Management, Environmental Sciences, Environmental Studies* or *Economics* on the advanced level of the major *Science and Innovation Management, Environmental Sciences, Environmental Studies* or *Economics* at Utrecht University (or equivalent to that level)
- e) academic and research skills at the advanced level of the major *Science and Innovation Management, Environmental Sciences, Environmental Studies* or *Economics* at Utrecht University (or equivalent to that level)

2. Students will be selected based on objective standards regarding:

- a) their previous academic performance in a relevant subject area
- b) relevant skills
- c) their command of the language or languages used in the programme
- d) the following additional selection criteria with proven relevance for the opinion on the suitability of the candidate:
 - motivation
 - average grade

This information is used to consider whether the student concerned will be able to complete the Master's Programme successfully within the set time period.

The admission requirements have been formulated clearly and transparently so that candidates know in advance what requirements must be met in order to qualify for selection.

Art. 3.1 – Aim of the degree programme

1. The degree programme aims to:

- provide students with specialised knowledge, skills and understanding in the field of *Science and Innovation* so that they can achieve the final qualifications as mentioned in Article 3.1.2
- prepare students for professional employment in one or more disciplines of *Science and Innovation*
- prepare students for training as researchers in the field of *Science and Innovation*

2. Graduates in *Science and Innovation*
 1. have advanced knowledge and understanding of the dynamics and challenges of *Science and Innovation* in the context of both organisations and society at large
 2. can conduct research on the dynamics and challenges of *Science and Innovation* in a creative and independent way
 3. can apply knowledge and research methods as well as problem-solving abilities in broader contexts related to the dynamics and challenges of *Science and Innovation*
 4. have insight into the complex interactions between science, innovative technology and society and are able to reflect critically on the roles of science and technology in society
 5. have professional and academic skills, particularly in relation to the dynamics and challenges of *Science and Innovation*
 6. can apply knowledge and understanding in such a way that they demonstrate a professional approach to their work
 7. can communicate their conclusions, as well as the knowledge, reasons and considerations underlying these conclusions, to an audience of specialists and non-specialists alike
 8. The graduate is able to study and work independently and explore new areas of interest in the field of the programme or related fields and demonstrates a professional approach to their work

More programme-specific qualifications are listed in the prospectuses of the different programmes.

Art. 3.6 – Components of the Master’s programme

1. Appendices 1 and 2 describe the required courses of the programmes, including the course load per course.
2. Students may choose optional courses. The course load of the optional courses are listed in Appendices 1 and 2. The rules for choosing optional courses are listed in Appendix 3.
3. The requirements for the Annotation Sustainable Entrepreneurship and Innovation can be found in Appendices 4a and 4b.
4. The prospectus gives a detailed description of the content and type of courses in the different programmes, including prior knowledge that is required to participate successfully.

Art. 4.2 – Course admission requirements

The Executive Board decides the order in which the required components of a Master’s degree programme must be completed. This has been listed in Appendix 5.

art. 4.7 –Evaluation of the quality of education

1. The Director of Education monitors the quality of education, and ensures that both the courses and the curriculum are evaluated. The Director takes into consideration the advice and suggestions given by the Education Committee regarding improving and ensuring the quality of the programme.
2. Students are informed of the outcomes of the course and curriculum evaluations.

Appendices

Appendix 1: Exam programme Innovation Sciences

1. Compulsory components (105 EC)

- Innovation Management	7.5 EC
- Innometrics	7.5 EC
- Quantitative Innovation Analytics	7.5 EC
- Innovation Systems and Processes	7.5 EC
- Societal Challenges and Innovation Theory	7.5 EC
- Qualitative Innovation Analytics	7.5 EC
- Consultancy Project IS and SBI	15 EC
- Master's thesis	45 EC

2. Optional components (15 EC)

Students should select optional courses for a total of 15 EC. At least 7.5 EC of this should be credits from natural science courses.

3. Conversion of former courses

Not applicable in 2022-2023

Appendix 2: Exam programme Sustainable Business & Innovation

1. Compulsory components (105 EC)

- Innovation Management	7.5 EC
- Understanding and Assessing Technologies for Sustainability	7.5 EC
- Corporate Sustainability and Change Management	7.5 EC
- Sustainability Assessment and Management Tools	7.5 EC
- Governance and Sustainability Transitions	7.5 EC
- Sustainable Business Research Methods	7.5 EC
- Consultancy Project IS and SBI	15 EC
- Master's thesis	45 EC

2. Optional components (15 EC)

Students should select optional courses for a total of 15 EC.

3. Conversion of former courses

<i>Old course</i>	<i>New course 2022-2023</i>
Governance and Change Management for Sustainability (GEO4-2604)	Corporate Sustainability and Change Management (GEO4-2610)
Toolbox 1: Environmental assessment and management approaches (GEO4-2602)	Sustainability Assessment and Management Tools (GEO4-2602)
Toolbox 2: CS implementation: theory and practice (GEO4-2603)	Corporate Sustainability and Change Management (GEO4-2610)
Note: if a student did not pass both Governance and Change Management for Sustainability (GEO4-2604) and Toolbox 2: CS implementation: theory and practice (GEO4-2603), they should take both courses mentioned to the right of this cell:	Corporate Sustainability and Change Management (GEO4-2610) and Governance and Sustainability Transitions (GEO4-2611)

Appendix 3: Rules for choosing elective courses

1. Students in the Master's programme choose elective courses from another or their own Master's programme. Courses that are obligatory in the exam programme cannot be used as elective courses.
2. For Innovation Sciences: at least 7.5 EC of the electives should be credits from natural science courses.
3. Honours programmes for Master's students (e.g. Young Innovators, GHIS, Leadership Programme) do not count towards the electives in the programme.
4. Electives as mentioned in the student's academic progress review in Osiris are pre-approved by the programme leader and by the Board of Examiners. Students can enrol for those courses via Osiris. It remains the student's responsibility to make sure that the points mentioned under 6 d-f are met. If the

course is from another department than the Copernicus Institute, it may be that other students have priority and that they are therefore placed on a waiting list.

5. It is possible to choose other courses than the pre-approved courses mentioned in Osiris. Any non-pre-approved elective courses must be subjected in advance to the programme leader and the Board of Examiners for approval. The programme leader will advise the Board in this matter.
6. The application for a non-pre-approved elective is done by a written request (form) to the programme leader. Written information on the content, the level, and the study load of the course (preferably by means of a copy of the course's description from the course catalogue) must be attached. The 'Application Form Elective courses Copernicus' can be found in the Blackboard communities Innovation Sciences and Sustainable Business and Innovation.
7. The programme leader tests the proposed elective course(s) on the following criteria:
 - a. It must be thematically linked to the Master's programme;
 - b. It concerns a course at master level (M);
 - c. There is no overlap in content with courses still to be taken or already taken. The student is responsible for making sure that:
 - d. The course is available to students of the IS/SBI programme;
 - e. The student fulfills the entrance requirements of the course (if applicable). Actual participation is only possible if students satisfy the course's entrance conditions; in case of doubt they should contact the course coordinator first;
 - f. The course is not taught in the same period and timeslot as another course the student has selected.
8. If the programme leader has declared that the elective course(s) meet the criteria under 6a-c (by either signing the application form or by email), the student sends the (signed) application form (and programme leader's email if applicable) and the course information to the Board of Examiners (Boardofexaminers.geo@uu.nl). The Board of Examiners takes the final decision on whether or not the elective is approved.
9. In the programme's course schedule, room has been reserved for taking electives. However, the student is free to deviate from this planning, e.g. because she/he wishes to take an interesting elective course in another period. If this causes delay in the study planning, the responsibility is for account of the student! Students are therefore advised to take their electives in the reserved periods and timeslots, or use a part of the time planned for their internship and/or Master's thesis.

Appendix 4a: Requirements for the Annotation Sustainable Entrepreneurship and Innovation (Innovation Sciences) (only for cohorts 2020/21 and earlier)

In order to qualify for the annotation, the following three requirements must be fulfilled:

- 1) having passed the examinations of one of these two courses:
 - Innovation Management (GEO4-2268; 7,5 EC) with an assignment regarding a sustainability subject;

or:

 - Sustainable Entrepreneurship (ECMSE; 7,5 EC).
- 2) having passed the examinations of one of these (elective) courses, which may not be the same course as the course passed for fulfillment of requirement 1 mentioned above:
 - GEO4-2521: Bio-based economy
 - GEO4-2514: Energy in the Context of Sustainability
 - GEO4-2312: Energy Supply Technologies
 - GEO4-2604: Governance and Change Management for Sustainability (not available in 2022/23)
 - GEO4-2268: Innovation Management
 - GEO4-5501: Techniques of Futuring
 - ECMSE: Sustainable Entrepreneurship
- 3) having conducted a research project of at least 15 EC related to the subject of Sustainable Entrepreneurship & Innovation. This must be achieved with the Master's Thesis (GEO4-2239X; 45 EC) or with the Consultancy Project (GEO4-2252; 15 EC) on a subject related to Sustainable Entrepreneurship & Innovation.

The requirements for the research component are:

- It is about newly developed or to be developed sustainable production processes, products, and/or services created by firms (within established firms and/or new start-ups);
- These activities need to be new to the current business activities of these firms;
- It needs to include some form of data collection about these new business activities.

Appendix 4b: Requirements for the Annotation Sustainable Entrepreneurship and Innovation (Sustainable Business and Innovation) (only for cohorts 2020/21 and earlier)

In order to qualify for the annotation, the following three requirements must be fulfilled:

- 2) having passed the examinations of one of these two courses:
 - Innovation Management (GEO4-2268; 7,5 EC) with an assignment regarding a sustainability subject;
 - or:*
 - Sustainable Entrepreneurship (ECMSE; 7,5 EC).
- 3) having passed the examinations of one of these (elective) courses, which may not be the same course as the course passed for fulfillment of requirement 1 mentioned above:
 - GEO4-2521: Bio-based Economy
 - GEO4-2312: Energy Supply Technologies
 - GEO4-2604: Governance and Change Management for Sustainability (not available in 2022/23)
 - GEO4-2268: Innovation Management
 - GEO4-5501: Techniques of Futuring
 - ECMSE: Sustainable Entrepreneurship
- 3) having conducted a research project of at least 15 EC related to the subject of Sustainable Entrepreneurship & Innovation. This must be achieved with the Master's Thesis (GEO4-2606; 45 EC) or with the Consultancy Project (GEO4-2605; 15 EC) on a subject related to Sustainable Entrepreneurship & Innovation.

The requirements for the research component are:

- It is about newly developed or to be developed sustainable production processes, products, and/or services created by firms (within established firms and/or new start-ups);
- These activities need to be new to the current business activities of these firms;
- It needs to include some form of data collection about these new business activities.

Appendix 5: Entrance requirements 2022-23

Innovation Sciences:

Course	Entrance requirement
Sustainable Food Systems (GEO4-2005)	Letter of acceptance of a Master's programme
Consultancy Project IS and SBI (GEO4-2007)	<ul style="list-style-type: none"> - Letter of acceptance MSc Innovation Sciences or Sustainable Business and Innovation & Passed at least three out of four examinations of <ul style="list-style-type: none"> - Innovation Management (GEO4-2268) - Quantitative Innovation Analytics (GEO4-2270) - Innovation Systems and Processes (GEO4-2257) - Innometrics (GEO4-2259) Recommended pre-requisites: <ul style="list-style-type: none"> - Qualitative Innovation Analytics (GEO4-2260) - Societal Challenges & Innovation Theory (GEO4-2258)
Innovation and International Development (GEO4-2009)	Letter of acceptance MSc Sustainable Development or MSc Innovation Sciences or MSc Sustainable Business & Innovation
Master's Thesis IS (GEO4-2239X)	<ul style="list-style-type: none"> - Letter of acceptance MSc Innovation Sciences - Passed at least five out of six examinations of: <ul style="list-style-type: none"> - Technology Related Venturing or Innovation Management (GEO4-2268) - Innovation Systems and Processes (GEO4-2257) - Societal Challenges & Innovation Theory (GEO4-2258) - Innometrics (GEO4-2259)

	<ul style="list-style-type: none"> - Qualitative Innovation Analytics (GEO4-2260) - Quantitative Innovation Analytics (GEO-2270)
Innovation Systems and Processes (GEO4-2257)	None
Societal Challenges & Innovation Theory (GEO4-2258)	Recommended prerequisites: <ul style="list-style-type: none"> - Innovation Systems and Processes (GEO4-2257), and - Innovation Management (GEO4-2268)
Innometrics (GEO4-2259)	None
Qualitative Innovation Analytics (GEO4-2260)	Not for SBI students
Innovation Management (GEO4-2268)	Letter of acceptance MSc Innovation Sciences or Sustainable Business and Innovation
Tailor made course IS (GEO4-2269)	<ul style="list-style-type: none"> - Letter of acceptance MSc Innovation Sciences - At least 45 EC passed within the programme
Quantitative Innovation Analytics (GEO4-2270)	<p>Followed the course:</p> <ul style="list-style-type: none"> - Innometrics (GEO4-2259) <p>Recommended pre-requisite:</p> <ul style="list-style-type: none"> - Innovation Management (GEO4-2268)
Techniques of Futuring (GEO4-5501)	None

Sustainable Business and Innovation:

Course	Entrance requirement
Sustainable Food Systems (GEO4-2005)	<ul style="list-style-type: none"> - Letter of acceptance of a Master's programme
Consultancy Project IS and SBI (GEO4-2007)	<ul style="list-style-type: none"> - Letter of acceptance MSc Sustainable Business and Innovation or Innovation Sciences - Passed at least three out of four examinations of: <ul style="list-style-type: none"> • Innovation Management (GEO4-2268) • Understanding and Assessing Technologies for Sustainability (GEO4-2608) • Sustainability assessment and management tools (GEO4-2602) • Corporate Sustainability and Change Management (GEO4-2610) - Recommended pre-requisites: <ul style="list-style-type: none"> • Qualitative Innovation Analytics (GEO4-2260) or Sustainable Business Research Methods (GEO4-2609) • Governance and Sustainability Transitions (GEO4-2611)
Innovation and International Development (GEO4-2009)	Letter of acceptance MSc Sustainable Development or MSc Innovation Sciences or MSc Sustainable Business & Innovation
Innovation Management (GEO4-2268)	Letter of acceptance MSc Innovation Sciences or Sustainable Business and Innovation

Sustainability assessment and management tools (GEO4-2602)	Letter of acceptance MSc Sustainable Business and Innovation or MSc Innovation Sciences or MSc Sustainable Development or MSc Water Science and Management Recommended pre-requisites: Understanding and Assessing Technologies for Sustainability (GEO4-2608)
Master's Thesis (GEO4-2606)	<ul style="list-style-type: none"> - Letter of acceptance MSc Sustainable Business and Innovation - Passed at least five out of six examinations of: <ul style="list-style-type: none"> • Business and Sustainability Challenges (GEO4-2601) or Innovation Management (GEO4-2268) • Understanding and Assessing Technologies for Sustainability (GEO4-2608) • Toolbox 1: Environmental assessment and management approaches (GEO4-2602) • Toolbox 2: CS implementation: theory and practice (GEO4-2603) • Governance and Change Management for Sustainability (GEO4-2604) • Qualitative Innovation Analytics (GEO4-2260) or Sustainable Business Research Methods (GEO4-2609)
Tailor made course SBI (GEO4-2607)	<ul style="list-style-type: none"> - Letter of acceptance MSc Sustainable Business and Innovation - At least 45 EC passed within the programme. Recommended pre-requisites: All first year SBI courses
Understanding and Assessing Technologies for Sustainability (GEO4-2608)	Letter of acceptance MSc Sustainable Business and Innovation or MSc Innovation Sciences
Sustainable Business Research Methods (GEO4-2609)	Letter of acceptance MSc Sustainable Business and Innovation
Corporate Sustainability and Change Management (GEO4-2610)	Letter of acceptance MSc Sustainable Business and Innovation Recommended pre-requisites: Innovation Management (GEO4-2268)
Governance and Sustainability Transitions (GEO4-2611)	Letter of acceptance MSc Sustainable Business and Innovation
Techniques of Futuring (GEO4-5501)	None