



Curriculum for the  
Master's Degree Programme

# Environmental Systems Sciences / Sustainability and Innovation Management

(ESS / SIM)

**Please note: The English version of this document is a courtesy translation. Only the German version is legally binding.**

The legal basis of the social and economic Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" is the Universities Act (in German: *Universitätsgesetz*, UG) and the statutes of the University of Graz. **Only the curriculum written in German is legally valid.**

On 2020/06/24, the Senate enacted the 1st amendment to the curriculum for the now renamed Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" pursuant to § 25 para. 1 line 10 UG.

## Index

<b>§ 1 Subject matter, qualification profile and relevance of the degree programme .....</b>	<b>3</b>
(1) Subject of the degree programme .....	3
(2) Qualification profile and competences .....	3
(3) Demand for and relevance of the degree programme regarding science and the labour market .	3
<b>§ 2 General provisions .....</b>	<b>4</b>
(1) Admission requirements .....	4
(2) Duration and structure of the degree programme .....	4
(3) Academic degree.....	5
(4) Number of possible participants in courses and ranking criteria .....	5
<b>§ 3 Structure and outline of the degree programme.....</b>	<b>5</b>
(1) Modules and exams .....	5
(2) Registration requirement(s) for attending courses .....	6
(3) Environmental Elective Subject .....	7
(4) Master's thesis.....	7
(5) Free electives .....	7
(6) Student mobility .....	7
<b>§ 4 Language.....</b>	<b>7</b>
<b>§ 5 Master's examination .....</b>	<b>7</b>
<b>§ 6 Entry into force of the curriculum .....</b>	<b>8</b>
<b>§ 7 Transitional provisions .....</b>	<b>8</b>
<b>Annex I: Module Descriptions .....</b>	<b>9</b>
<b>Annex II: Sample Degree Programme Structured by Semester .....</b>	<b>13</b>
<b>Annex III: Equivalence lists .....</b>	<b>14</b>

## **§ 1 Subject matter, qualification profile and relevance of the degree programme**

### **(1) Subject of the degree programme**

The Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM) provides students with a research-based qualification that enables them to deal with social and economic aspects of corporate and inter-company sustainability management, as well as sustainability-oriented innovation and transition processes. This specialized qualification is supplemented by interdisciplinary and systems science competences, whereby a special emphasis is placed on the application of research-based methods. This education is complemented by an independently designed environmental module, which enables the student to establish an individual focus.

### **(2) Qualification profile and competences**

Upon completing the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM), graduates are able to:

- apply the acquired relevant expertise in the subject areas of corporate and inter-company sustainability management, innovation and transition management, as well as to apply their advanced methodological competences in both relevant research projects and in practice;
- to apply systems science methods to conceptualize and to establish parameters for problem situations, as well as to evaluate results and to derive options for processing or action in relevant subject areas from these results;
- to communicate at a high level in interdisciplinary teams together with representatives from other disciplines, to work on projects related to sustainability and to jointly find possible solutions to complex problems;
- to draw associations between knowledge from different disciplines and, based on this, to make competent decisions in complex and unclear problem situations;
- to discuss sustainability-related issues using well-founded arguments with affected target groups, employees and upstream agencies;
- to apply the acquired skills in companies and enterprises as well as in the public sector or in NGOs and to either newly establish or further develop functional areas and strategies that will address both current and future challenges; and
- to independently deal with complex, unpredictable situations in a responsible managerial position, employing adequate sustainability-oriented strategies and measures, as well as to lead the process of applying strategic decisions.

### **(3) Demand for and relevance of the degree programme regarding science and the labour market**

Graduates of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM) are ideally qualified for employment in a wide variety of career fields thanks to the combination of in-depth knowledge they have acquired in the area of sustainability management, the repertoire of methods they have accumulated from the systems and formal sciences, as well as their ability to work in interdisciplinary teams. In leading positions, they can independently deal with complex, unpredictable situations in a responsible managerial position by employing adequate sustainability-oriented strategies and measures, as well as by leading the process of applying strategic decisions. The Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" also prepares students to enter a doctoral degree programme.

Graduates of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM) typically find employment in academic, private sector/industrial, public and semi-public sectors:

- Teaching and research at the university level
- Strategic and operational innovation and sustainability management in companies and other organizations
- Environmental and management consulting as well as supervision of environmental protection institutions
- Application of sustainability-oriented business models
- Development and application of sustainable product and process innovations

- Development and application of sustainability-related strategies and packages of measures in the public sector
- Environmental management in private companies and NGOs
- Employment areas in national and international organizations
- Various other complex operational and inter-operational fields of activity

## § 2 General provisions

### (1) Admission requirements

1. Graduates of the following previous degree programmes are eligible for admission to the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM):
  - a. Bachelor's degree in Environmental Systems Science with a specialization in Business Administration at University of Graz
2. The degree programmes:
  - Bachelor's degree in Environmental Systems Science with specialization in Economics at University of Graz,
  - Bachelor's degree programme in Business Administration, and
  - Degree programmes in which at least 180 ECTS credits have been earned, and in which a total of 120 ECTS credits have been earned in the environmental sciences, systems sciences and/or social and economic sciences, and of which at least 50 ECTS credits are relevant for the subject area of Business Administration,
 are generally equivalent to the relevant previous degree programmes.
3. If students have graduated from a degree programme as described in line 2, the full equivalence of this programme with a relevant previous degree programme can be established by requiring the student to take and pass additional examinations and/or to complete a bachelor's thesis, earning a maximum of 30 ECTS credits. In this context, the following is taken into account:
  - a. at least 8 ECTS credits from the system sciences
  - b. at least 10 ECTS credits from mathematics and statistics, and
  - c. at least 12 ECTS credits from the area of Innovation and Sustainability Management or Environmentally Oriented Business Administration.
 need to be earned.
4. Degree programmes that are not described in line 2 or for which requirements would have to be granted equivalent to more than 30 ECTS credits in order to establish the equivalence with the degree programme in question are considered as not equivalent to the degree programme in question.
5. As a prerequisite for admission to the degree programme, evidence of proficiency in the English language must be provided, as this enables the student to successfully progress in the degree programme. The form of the evidence is specified in a regulation issued by the Rectorate.

### (2) Duration and structure of the degree programme

The master's degree programme with a workload of 120 ECTS credits comprises four semesters and is structured in modules.

Module Abbreviation and Module	ECTS
Module A: Interdisciplinary Practice	10
Module B: Systems Sciences	10
Module C: Corporate Sustainability Management	12
Module D: Innovation and Transition Management	12
Module E: Research Methods and Competences	15
Module F: Environmental Elective Subject	20

Module G: Free Electives	10
Master's Thesis	30
Master's Exam	1
<b>Total</b>	<b>120</b>

### (3) Academic degree

Graduates of the social and economic Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM) are awarded the academic degree of "Master of Science", abbreviated as "MSc".

### (4) Number of possible participants in courses and ranking criteria

- For educational-didactic and spatial reasons, which are influenced by considerations of the number of devices/equipment or safety, the number of participants in the individual course types in modules A, B, C, D and E may be limited:

Course type	Number of participants
Lecture (in German: <i>Vorlesung</i> , VO)	no restriction
Course (in German: <i>Kurse</i> , KS)	25
Seminar (in German: <i>Seminare</i> , SE)	15
Working group (in German, <i>Arbeitsgruppe</i> , AG)	20

- If the specified maximum number of participants is exceeded, students are admitted to the courses based on the criteria established in the ranking procedure URBI, which is described in the Senate Directive on the allocation of course places in courses with a limited number of participants, as amended (in German: *Richtlinie des Senats über die Vergabe von Lehrveranstaltungsplätzen in Lehrveranstaltungen mit beschränkter Teilnehmendenzahl*, Mitteilungsblatt der Karl-Franzens-Universität Graz, no. 37 and amendments).

## § 3 Structure and outline of the degree programme

### (1) Modules and exams

The modules and examinations are listed below with the module title, course title, course type, ECTS credits, contact hours and the recommended semester assignment. The module descriptions can be found in Annex I.

	Modules and exams	Lecture type	ECTS	Course hours	Rec. sem.
<b>Module A</b>	<b>Interdisciplinary Practice</b>		<b>10</b>	<b>6</b>	
A.1	IP – Interdisciplinary Practical Training	AG	10	6	3
<b>Module B</b>	<b>Systems Sciences</b>		<b>10</b>	<b>6</b>	
B.1	Data in Systems Sciences	VO	3	2	1
B.2	Systems Modelling and Systems Analysis	VO	3	2	2
	<i>One course has to be chosen from among the following courses (B.3, B.4):</i>				
B.3	Data in Systems Sciences	SE	(4)	(2)	(3)
B.4	Systems Modelling and Systems Analysis	SE	(4)	(2)	(3)
<b>Module C</b>	<b>Corporate Sustainability Management</b>		<b>12</b>	<b>6</b>	
C.1	Strategic Sustainability Management	KS	4	2	1

C.2	Sustainability Controlling and Management	KS	4	2	1
	<i>One course has to be chosen from among the following courses (C.3, C.4, C.5, C.6, C.7, C.8):</i>				
C.3	Value Chain Management	KS	(4)	(2)	(2)
C.4	Waste and Recycling	KS	(4)	(2)	(2)
C.5	Change Management and Learning for Sustainability	KS	(4)	(2)	(2)
C.6	Sustainable Business Models	KS	(4)	(2)	(2)
C.7	Sustainable Product Management	KS	(4)	(2)	(2)
C.8	Selected Topics of Sustainability Management	KS	(4)	(2)	(2)
<b>Module D</b>	<b>Innovation and Transition Management</b>		<b>12</b>	<b>6</b>	
D.1	Transition Management	KS	4	2	1
D.2	Sustainable Innovation	KS	4	2	1
	<i>One course has to be chosen from among the following courses (D.3, D.4, D.5, D.6, D.7, D.8):</i>				
D.3	Environmental and Technology Assessment	KS	(4)	(2)	(2)
D.4	Environmental Decision-making	KS	(4)	(2)	(2)
D.5	Product and Service Development	KS	(4)	(2)	(2)
D.6	Human Factors in Transitions	KS	(4)	(2)	(2)
D.7	Systems Sciences in Innovation and Transition Research	KS	(4)	(2)	(2)
D.8	Selected Topics of Innovation Management	KS	(4)	(2)	(2)
<b>Module E</b>	<b>Research Methods and Competences</b>		<b>15</b>	<b>10</b>	
E.1	Quantitative Methods of Social Research	KS	4	2	2
E.2	Seminar in Research Methodology	SE	3	2	2
E.3	Research Project in Sustainability and Innovation Management	AG	6	4	3
E.4	Master Seminar	SE	2	2	4
<b>Module F</b>	<b>Environmental Elective Subject</b>		<b>20</b>		
	<i>Proposals are found on the website of the Coordination Office for Environmental Systems Science</i>				
<b>Module G</b>	<b>Free Electives</b>		<b>10</b>		
	<b>Master's Thesis</b>		<b>30</b>		<b>3-4</b>
	<b>Master's Exam</b>		<b>1</b>		<b>4</b>
<b>Total</b>			<b>120</b>		

**(2) Registration requirement(s) for attending courses**

Module title/course title		Condition(s) for registration	
E.3	Research Project in Sustainability and Innovation Management	E.2	Seminar in Research Methodology

### **(3) Environmental Elective Subject**

To complete Module F, courses to the extent of 20 ECTS credits need to be attended and passed according to the following criteria:

- a) The module comprises an environmentally relevant subject area with coordinated content. Proposals for the environmental elective subject are published on the website of the Coordination Office for Environmental System Sciences.
- b) This environmental subject area is taught in one or more courses, enabling students to examine the subject matter in detail.
- c) These courses can be taken at any recognised domestic or foreign university, depending on the subject area.
- d) The environmental elective subject is assigned a unique title, which appears on the master's degree certificate.
- e) The Chairperson of the Curricula Commission for Environmental Systems Science decides in advance whether the environmental elective subject is admissible (title and courses) upon the student's request. The completed application form for the environmental elective subject should be submitted to the Coordination Office for Environmental Systems Science.
- f) In any case, it must be ensured that the selected courses have not also been selected in other modules; a double assignment of courses is excluded.

### **(4) Master's thesis**

1. The topic of the master's thesis must be taken from one of the modules B, C, D, or F or must be meaningfully related to one of these modules. The governing body responsible for study law will make decisions regarding exceptions.
2. The topic of the master's thesis must be taken from one of the modules B, C, D, or F or must be meaningfully related to one of these modules. The governing body responsible for study law will make decisions regarding exceptions.

### **(5) Free electives**

1. Students are recommended to choose the free electives from the following areas:  
Courses from the fields of communication technology, philosophy of science, technology assessment, women's and gender studies, the fields of foreign languages, from among the "Timegate" offers, as well as courses offered by the Centre for Social Competence and the Inter-University Research Centre for Technology, Work and Culture (IFZ).
2. Students are recommended to gain practical employment experience as part of the free electives, whereby one week corresponds to 1.5 ECTS credits in terms of full employment.

### **(6) Student mobility**

1. It is possible for students to complete a stay abroad during the master's degree programme period. The third semester of the degree programme is particularly suitable for this.

## **§ 4 Language**

The Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS / SIM) is conducted in English.

## **§ 5 Master's examination**

The Master's examination is an oral examination by committee, which is worth 1 ECTS credit point. It can only be passed once all of the other academic performance items described in § 3, section 1 have been positively completed and the master's thesis has been positively assessed.

The examination committee consists of three persons.

The subject of the master's examination is the public defence and presentation of the master's thesis, the module to which the master's thesis has been assigned, and one of the following modules:

- Module B: Systems Sciences
- Module C: Corporate Sustainability Management
- Module D: Innovation and Transition Management
- Module E: Research Methods and Competences
- Module F: Environmental Elective Subject

One of the two modules C or D must be the subject of the master's examination in any case.

A uniform grade should be awarded for the master's examination, which also takes into account the overall impression made by the student during the examination.

## **§ 6 Entry into force of the curriculum**

This Curriculum 2020 shall enter into force on 1 October 2020 (Curriculum 2020).

## **§ 7 Transitional provisions**

Students in the Master's Degree Programme in "Environmental Systems Science - Sustainability-oriented Management" who are subject to the Curriculum 2011 when this curriculum comes into force on 1 October 2020 are entitled to complete their studies according to the provisions of the Curriculum 2011 within six semesters. If the degree programme is not completed by 30.9.2023, the students will be entitled to complete their studies subject to the curriculum for the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM) as amended from time to time.

The Chair of the Senate: Niemann



## Annex I: Module Descriptions

<b>Module A</b>	<b>Interdisciplinary Practice</b>
<b>ECTS credits</b>	<b>10 ECTS</b>
<b>Contents:</b>	<ul style="list-style-type: none"> <li>Advanced concepts of analysis, modelling and assessment of human-environment systems</li> <li>Inter- and transdisciplinary methods</li> <li>Practical course based on an inter- or transdisciplinary problem in the field of applied environmental research</li> </ul>
<b>Objective (expected results of degree programme and acquired competences)</b>	<p>After completing Module A, students will be able to:</p> <ul style="list-style-type: none"> <li>Analyse inter- and transdisciplinary problems relevant to the environment and solve them by applying suitable methods</li> <li>Present approaches to solutions/results that have been worked out</li> <li>Understand and classify other disciplinary approaches and perspectives</li> <li>Review and summarize specialized literature,</li> <li>Critically question ideas and models, evaluate them and develop new ones</li> <li>Independently plan the continuing education process</li> <li>Communicate and work in interdisciplinary teams fundamentally</li> <li>Analyse problems holistically.</li> </ul>
<b>Teaching and learning methods:</b>	Theoretical input from teachers as well as guest lectures, group work, collaboration, detailed analysis of selected literature, computer demonstrations, explanation of concepts using specific examples, individual and joint writing projects to produce an academic report or paper in English.
<b>Frequency of the course:</b>	Every semester
<b>Module B</b>	<b>Systems Sciences</b>
<b>ECTS credits</b>	<b>10 ECTS</b>
<b>Contents:</b>	<ul style="list-style-type: none"> <li>Conceptual, mathematical and computer-based system modelling</li> <li>Data extraction, integration and analysis</li> <li>Model and system evaluation</li> <li>Conceptual and computer-based systems analysis</li> <li>Resilience and sustainability of systems</li> </ul>
<b>Objective (expected results of degree programme and acquired competences)</b>	<p>After completing Module B, students will be able to:</p> <ul style="list-style-type: none"> <li>Model systems</li> <li>Understand scenarios and concepts that enable them to integrate natural and social sciences and apply them to case studies</li> <li>Evaluate systems from a sustainability perspective</li> <li>Review and summarize technical literature</li> <li>Present findings clearly, both verbally and in writing</li> <li>Work in an interdisciplinary way</li> <li>Critically question ideas and models, evaluate them and develop new ones and</li> <li>Independently plan the continuing education process.</li> </ul>
<b>Teaching and learning methods:</b>	Lectures, ongoing homework, collaboration, detailed analysis of selected literature, computer demonstrations, writing papers, explanation of concepts using specific examples.
<b>Frequency of the course:</b>	Lecture every year, seminar every semester or as needed.
<b>Module C</b>	<b>Corporate Sustainability Management</b>
<b>ECTS credits</b>	<b>12 ECTS</b>
<b>Contents:</b>	<ul style="list-style-type: none"> <li>Integration of sustainability aspects into corporate management</li> </ul>

	<ul style="list-style-type: none"> <li>• Analysing and systematising sustainability strategies</li> <li>• Stakeholder management</li> <li>• Development and implementation of sustainable corporate strategies</li> <li>• Sustainability reporting and other forms of CSR communication</li> <li>• Organizational culture and sustainability strategies</li> <li>• Sustainability management as management of resilience</li> <li>• Standards, tools and methods of sustainability controlling (LCA, LCSA, environmental cost accounting)</li> <li>• Analysis of planning, management and control of sustainable business performance</li> <li>• Change management, organizational learning, development of adaptive and transformational change strategies</li> <li>• Consideration and analysis of sustainable business models</li> <li>• Corporate sustainability management from the perspective and under consideration of value chain management</li> </ul>
<b>Objective (expected results of degree programme and acquired competences)</b>	<p>After completing Module C, students will be able to:</p> <ul style="list-style-type: none"> <li>• Distinguish between models of sustainability management</li> <li>• Develop different sustainability strategies</li> <li>• Plan corporate sustainability management in a context-specific way</li> <li>• Apply management tools to support sustainability</li> <li>• Analyse and reflect on the practical implementation of sustainability management from a sustainability perspective</li> <li>• Conduct stakeholder analyses and develop systems and scenario techniques related to questions of entrepreneurship and the generation of innovations</li> <li>• Apply sustainability assessment methods (LCA, LCSA)</li> <li>• Integrate concepts of value chain management into corporate sustainability management</li> <li>• Work in interdisciplinary groups and plan negotiation processes</li> <li>• Develop and reflect on individual and collaborative problem-solving processes as holistically as possible</li> <li>• Plan communication to meet stakeholder needs</li> <li>• Know and be able to shape the implications of sustainable change processes</li> <li>• Predict and critically analyse interactions between experts and stakeholders</li> <li>• Work as a member of a team to optimally support projects</li> <li>• Work on complex problems holistically and</li> <li>• Understand, analyse and develop sustainable business models.</li> </ul>
<b>Teaching and learning methods:</b>	Lectures, case studies, case study-based individual and group work incl. homework, reflections and discussions, lectures by practitioners, excursions, detailed analyses of selected literature, papers, research
<b>Frequency of the course:</b>	Compulsory courses every semester, Elective courses annually or as required

<b>Module D</b>	<b>Innovation and Transition Management</b>
<b>ECTS credits</b>	<b>12 ECTS</b>
<b>Contents:</b>	<ul style="list-style-type: none"> <li>• Concepts and theories of innovation and transition management</li> <li>• Management of sustainable innovations at the company and inter-company level</li> <li>• Environmental, sustainability and technology assessment methods in the context of innovation and transition</li> <li>• Perception and acceptance of innovations</li> <li>• Social change processes and the role of psychology in climate change perception</li> <li>• Normative and prescriptive decision theory with reference to decisions that affect sustainability</li> <li>• Modern aspects of product design and the service development processes</li> <li>• Systems science approaches and methods in the context of innovation and transition</li> </ul>
<b>Objective (expected results of degree programme and acquired competences)</b>	<p>After completing Module D, students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand, analyse and administer innovation and transition processes</li> <li>• Apply selected methods of environmental, sustainability and technology assessment</li> <li>• Develop innovation and transition processes sustainably</li> <li>• Apply systems science approaches in the context of innovation and transition</li> <li>• Work in interdisciplinary groups and develop negotiation processes</li> <li>• Design and reflect on individual and collaborative problem-solving processes as holistically as possible</li> <li>• Assess the scientific literature from a well-founded scientific perspective and apply the content to practical issues</li> <li>• Understand and be able to shape company/organizational issues of sustainable innovation management</li> <li>• Predict and critically analyse interactions between experts and stakeholders</li> <li>• Work as a member of a team to optimally support projects</li> <li>• Understand complex problems holistically.</li> </ul>
<b>Teaching and learning methods:</b>	Lectures, case studies, case study-based individual and group work, reflections and discussions, lectures by practitioners, excursions, homework, collaboration, detailed analyses of selected literature, papers, research
<b>Frequency of the course:</b>	Compulsory courses every semester, Elective courses annually or as required

<b>Module E</b>	<b>Research Methods and Competences</b>
<b>ECTS credits</b>	<b>15 ECTS</b>
<b>Contents:</b>	<ul style="list-style-type: none"> <li>• Analysis and design of research processes</li> <li>• Theory-guided and application-oriented processing of current research questions in sustainability and innovation-based research</li> <li>• Research-based consolidation of topics and methods from the Module Sustainability and Innovation Management as well as from the Module Operational Sustainability Management</li> <li>• Interdisciplinary processing of current environmentally relevant problems</li> <li>• System analysis, understanding, evaluation</li> <li>• Quantitative methods of empirical social research</li> </ul>

<b>Objective (expected results of degree programme and acquired competences)</b>	<p>After completing Module E, students will be able to:</p> <ul style="list-style-type: none"> <li>• Critically reflect on research processes using specific examples</li> <li>• Create a research design themselves</li> <li>• Work in a technically and methodologically correct manner and, in particular, when using qualitative and quantitative methods to conduct empirical social research</li> <li>• Conduct scientific work to address complex research questions and to derive action-specific conclusions</li> <li>• Work in interdisciplinary groups and to develop negotiation processes</li> <li>• Develop and reflect on individual and collaborative problem-solving processes as holistically as possible</li> <li>• Facilitate communication to support stakeholder needs</li> <li>• To design and critically analyse interactions between experts and stakeholders</li> <li>• Work as a member of a team to optimally support projects</li> <li>• Understand complex problems holistically and</li> <li>• Work in a self-determined manner.</li> </ul>
<b>Teaching and learning methods:</b>	Lectures, case studies, case study-based individual and group work, reflections and discussions, lectures by practitioners, excursions, homework, collaboration, detailed analyses of selected literature, papers, research.
<b>Frequency of the course:</b>	Every semester

This curriculum is not a legally binding translation into English

## Annex II: Sample Degree Programme Structured by Semester

The following sample degree programme schedule is not a compulsory semester assignment, but merely a recommendation and serves as guide for students.

	<b>Course title</b>	<b>ECTS</b>
<b>Course</b>	<b>Semester 1</b>	<b>30</b>
B.1	Data in Systems Sciences (VO)	3
C.1	Strategic Sustainability Management (KS)	4
C.2	Sustainability Controlling and Management (KS)	4
D.1	Transition Management (KS)	4
D.2	Sustainable Innovation (KS)	4
F	Environmental Elective Subject	4
G	Free Electives	7
	<b>Semester 2</b>	<b>30</b>
B.2	Systems-Modelling and Systems-Analysis (VO)	3
C	Free Elective from Corporate Sustainability Management (KS)	4
D	Elective from Innovation and Transition Management (KS)	4
E.1	Quantitative Methods of Social Research (KS)	4
E.2	Seminar in Research Methodology (SE)	3
F	Environmental Elective Subject	12
	<b>Semester 3</b>	<b>30</b>
A.1	IP – Interdisciplinary Practical Training (Master) (AG)	10
B.3	Data in Systems Sciences (SE)	4
B.4	or Systems Modelling and Systems Analysis (SE)	
E.3	Research Project in Sustainability and Innovation Management (AG)	6
F	Environmental Elective Subject	4
G	Free Electives	3
	Master's thesis	3
	<b>Semester 4</b>	<b>30</b>
E.4	Master's seminar (SE)	2
	Master's thesis	27
	Master's examination	1

## Annex III: Equivalence lists

Equivalence list when switching to the current curriculum (i.e. version 2020) of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM) from the version 11W curriculum of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability-oriented Management"

The left-hand side of the table lists examinations for the current curriculum. The right-hand side of the table shows examinations for the expiring curriculum (i.e. version 11W) of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management"; these examinations are recognized as equivalent to examinations for the current curriculum, when the student transfers to the current curriculum. Examinations for the expiring curriculum that are not listed can be applied to the free electives.

Currently valid curriculum (version 2020)					Expiring curriculum (version 11W)				
	Course title/examination	Course type	ECTS	KStd.		Course title/examination	Course type	ECTS	KStd.
A.1	IP – Interdisciplinary Practical Training	AG	10	6	A.1	Interdisziplinäres Praktikum (Master)	AG	10	6
B.1	Data in Systems Sciences	VO	3	2	B.1	Systemintegration und Systembewertung	VO	3	2
B.2	Systems Modelling and Systems Analysis	VO	3	2	B.2	Systemmodellierung	VO	3	2
B.3	Data in Systems Sciences	SE	4	2	B.3	Seminar zu Systemintegration und Systembewertung	SE	4	2
B.4	Systems Modelling and Systems Analysis	SE	4	2	B.4	Seminar zu Systemmodellierung	SE	4	2
C.1	Strategic Sustainability Management	KS	4	2	C.1	Strategic Sustainability Management	KS	4	2
C.2	Sustainability Controlling and Management	KS	4	2	C.2	Eco-Controlling	KS	4	2
C.3	Value Chain Management	KS	4	2	D.1	Value Chain Management	KS	4	2
C.4	Waste and Recycling	KS	4	2	D.2	Waste and Recycling	KS	4	2
C.5	Change Management and Learning for Sustainability	KS	4	2	C.3	Sustainability Entrepreneurship	KS	4	2
C.6	Sustainable Business Models	KS	4	2	D.5	Integrated Management Systems	KS	4	2
C.7	Sustainable Product Management	KS	4	2		<i>No equivalence</i>			
C.8	Selected Topics of Sustainability Management	KS	4	2	D.7	Selected Topics of Sustainability and Innovation Management *	KS	4	2
D.1	Transition Management	KS	4	2		<i>No equivalence</i>			
D.2	Sustainable Innovation	KS	4	2	C.4	Sustainable Innovation	KS	4	2
D.3	Environmental and Technology Assessment	KS	4	2	D.3	Environmental and Technology Assessment	KS	4	2
D.4	Environmental Decision-making	KS	4	2	D.4	Environmental Decision Making	KS	4	2
D.5	Product and Service Development	KS	4	2	D.6	Product and Service Development	KS	4	2

D.6	Human Factors in Transitions	KS	4	2		<i>No equivalence</i>			
D.7	Systems Sciences in Innovation and Transition Research	KS	4	2		<i>No equivalence</i>			
D.8	Selected Topics of Innovation Management	KS	4	2	D.7	Selected Topics of Sustainability and Innovation Management *	KS	4	2
E.1	Quantitative Methods of Social Research	KS	4	2		<i>No equivalence</i>			
E.2	Seminar in Research Methodology	SE	3	2	E.1	Seminar zu Forschungs-Methodik	SE	3	2
E.3	Research Project Sustainability and Innovation Management	AG	6	4	E.2 or E.3	Research Project Sustainability Management or Research Project Innovation Management	AG	6	4
E.4	Master's Seminar	SE	2	2	I.2	Masterseminar	SE	2	2
	Master's Thesis		30		I.1	Masterarbeit		30	
	Master's Exam		1		I.3	Masterprüfung		1	

\* Creditable for either C.8 or D.8.

**Equivalence list when switching from the version 11W curriculum of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability-oriented Management" to the current curriculum (i.e. version 2020) of the Master's Degree Programme in "Environmental Systems Sciences / Sustainability and Innovation Management" (ESS/SIM)**

The left-hand side of the table lists the examinations for the discontinued curriculum of the Master's Degree Programme in **"Environmental Systems Sciences / Sustainability and Innovation Management"**. The right-hand side of the table lists examinations for this curriculum which can be taken instead of the examinations provided in the expiring curriculum, if the examinations provided in the expiring curriculum are no longer offered.

Expiring curriculum (version 11W)					Currently valid curriculum (version 2020)				
	Course title/examination	Course type	ECTS	KStd.		Course title/examination	Course type	ECTS	KStd.
A.1	Interdisziplinäres Praktikum (Master)	AG	10	6	A.1	IP – Interdisciplinary Practical Training	AG	10	6
B.1	Systemintegration und Systembewertung	VO	3	2	B.1	Data in Systems Sciences	VO	3	2
B.2	Systemmodellierung	VO	3	2	B.2	Systems Modelling and Systems Analysis	VO	3	2
B.3	Seminar zu Systemintegration und Systembewertung	SE	4	2	B.3	Data in Systems Sciences	SE	4	2
B.4	Seminar zu Systemmodellierung	SE	4	2	B.4	Seminar Systems Modelling and Systems Analysis	SE	4	2
C.1	Strategic Sustainability Management	KS	4	2	C.1	Strategic Sustainability Management	KS	4	2
C.2	Eco-Controlling	KS	4	2	C.2	Sustainability Controlling and Management	KS	4	2
C.3	Sustainability Entrepreneurship	KS	4	2	C.5	Change Management and Learning for Sustainability	KS	4	2
C.4	Sustainable Innovation	KS	4	2	D.2	Sustainable Innovation	KS	4	2
D.1	Value Chain Management	KS	4	2	C.3	Value Chain Management	KS	4	2
D.2	Waste and Recycling	KS	4	2	C.4	Waste and Recycling	KS	4	2
D.3	Environmental and Technology Assessment	KS	4	2	D.3	Environmental and Technology Assessment	KS	4	2
D.4	Environmental Decision Making	KS	4	2	D.4	Environmental Decision-making	KS	4	2
D.5	Integrated Management Systems	KS	4	2	C.6	Sustainable Business Models	KS	4	2
D.6	Product and Service Development	KS	4	2	D.5	Product and Service Development	KS	4	2
D.7	Selected Topics of Sustainability and Innovation Management	KS	4	2	C.8 or D.8	Selected Topics of Sustainability Management or Selected Topics of Innovation Management	KS KS	4 4	2 2
E.1	Seminar zu Forschungs-Methodik	SE	3	2	E.2	Seminar in Research Methodology	SE	3	2
E.2	Research Project Sustainability Management	AG	6	4	E.3	Research Project Sustainability and Innovation Management	AG	6	4



E.3	Research Project Innovation Management	AG	6	4	E.3	Research Project Sustainability and Innovation Management	AG	6	4
E.4	Integration of Business and Economic Solutions concerning Environmental Issues	AG	6	4		<i>No equivalence</i>			
F.1	Anwendungsgebiete der Umweltökonomik	VU	6	2		<i>No equivalence</i>			
I.1	Masterarbeit		30			Master's Thesis		30	
I.2	Masterseminar	SE	2	2	E.4	Master's Seminar	SE	2	2
I.3	Masterprüfung		1			Master's Exam		1	

This curriculum is not a legally binding translation into English