

Universität für Bodenkultur Wien

University of Natural Resources and Life Sciences, Vienna



## Curriculum

for the Master's Programme in

## Environmental Sciences – Soil, Water and Biodiversity (EnvEuro)

066 449

October 1, 2015



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The master's programme "Environmental Sciences – Soil, Water and Biodiversity (EnvEuro)"<sup>1</sup> is a European programme jointly offered by the University of Natural Resources and Life Sciences, Vienna (BOKU), the University of Copenhagen, Denmark (UCPH), the Swedish University for Life Sciences, Sweden (SLU), and the University of Stuttgart-Hohenheim, Germany (UHOH).

## § 1 QUALIFICATION PROFILE

EnvEuro is a degree programme which serves to deepen and extend students' pre-vocational academic education, building on the basis provided by a bachelor degree programme (§ 51 [2] item 5 of the Universities Act UG 2002, Federal Law Gazette BGBl I no. 81/2009). The programme fulfils the requirements of Directive 2005/36/EC on the recognition of professional qualifications, article 11, letter e.

### 1a) Knowledge and personal and professional skills

The EnvEuro programme aims at providing candidates who can work professionally with soil, water and biodiversity in an environmental context and related to the use of natural resources, and based on insight in European ecosystems and knowledge on current European environmental management. The programme offers different possibilities for specialisation and is attractive for both students interested in management and policy, and students inclined to a strict natural science approach focusing on process and system functioning, process dynamics, monitoring and modelling. All students will start up with a common introduction to European environmental practises including legislation, regulation, monitoring/data collection, and policy. A joint European master's programme in Environmental Sciences also brings a broader range of complementary expertises together ensuring high educational quality in a multi-cultural, -economic and -political environment.

After completing the programme, the graduate will have the following competences:

#### Competences within basic science

- comprehend and analyse environmental concepts, problems and relationships in a European and global context.
- design and execute a research project at the postgraduate level using methods, instruments, and tools and present the outcome in a journal article.
- formulate the kinetics, equilibrium, and mass balances for chemical, physical, and biological processes affecting matter circulation in ecosystems within the selected area of specialisation for each student.
- develop and use mathematical models describing chemical, physical, and biological processes for predictive purposes and in relation to planning and management.
- carry out research projects and dedicated analyses within the area of specialisation of the graduate by use of up-to-date methods and principles, and based on clear formulation of problems, hypotheses and research methods.

#### Competences within applied science

- demonstrate capability and knowledge on strategies for handling and solving environmental problems and challenges in a European and a global context.
- understand the systemic and quantitative linkages between the use of natural resources and water quality.
- present deep insight in structure and functioning of natural and man-influenced rural ecosystems, environmental and health effects of ecosystem perturbations, and be able to

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<sup>1</sup> Referred to as „EnvEuro“ in the following

develop environmental technologies and measures for achieving sustainable production systems.

- understand and apply the methods and techniques used for environmental monitoring, and subsequent handling, statistical analysis and presentation of environmental data.
- understand the systematic and quantitative linkage between land use and environmental quality, with main focus on water resources.
- understand the fundamental principles behind environmental policy/legislation, regulation and management in Europe.
- create ideas and strategies for development of environmental technology in relation to remediation and reduction of pollution from soils and waters.

#### Competences within ethics and values

- understand the implications of sustainability concepts, and demonstrate insight in the environmental and land use history of Europe and the lessons learned from that.
- effectively communicate and collaborate with others across distances, cultural and language borders by use of different medias such as written texts, oral presentations, video conferences, and web-forums.
- use professional English in all oral and written communication.
- discuss and assess environmental issues and creation of public attitudes in a European perspective.

### **1b) Professional qualifications**

EnvEuro candidates qualify for environmental careers in private companies and the public sector related to:

- analysis, monitoring and modelling
- environmental technology
- environmental regulation, planning and control
- impact assessment and risk analysis
- research and education

Environmental careers for graduates can be found in the environmental sections of industries, environmental technology companies, consulting companies (agriculture, engineering), public administration from local to governmental levels, laboratories, universities and other research institutions, and in developing agencies.

## **§ 2 ADMISSION REQUIREMENTS**

### **2a) Deadlines**

Admission and application within the master's programme EnvEuro are conducted in a consortium procedure by all partner universities. The application for EU/EEA and Swiss citizens opens on the 1<sup>st</sup> of February and closes on the 1<sup>st</sup> of April. The application for non-EU/EEA citizens opens on the 15<sup>th</sup> of November and closes on the 15<sup>th</sup> of January.

With their application, students have to choose one of the four partner universities as home university. Applicants who elect SLU to be their home university must submit an additional application to University Admissions in Sweden by either the 15<sup>th</sup> of January (non-EU students and early application for EU/EEA and Swiss students) or the 1<sup>st</sup> of April (late application for EU/EEA and Swiss students).

## 2b) Admission Criteria

At each university, the following criteria have to be fulfilled by the students: Applicants should have a first university degree equivalent to a European bachelor in Natural Science with documented completion of basic courses comprising at least two of the disciplines: chemistry, biology/microbiology, mathematics/statistics, physics, natural resources, or earth science.

Admission criteria also comprise English language skills. The Advisory Board accepts the following ways of documenting the language skills:

1. Nationals of the following countries are exempt from submitting a language test: United Kingdom, Republic of Ireland, Australia, Canada, New Zealand, United States of America, Antigua and Barbuda, Bahamas, Barbados, Dominica, Grenada, Jamaica, St. Kitts und Nevi, St. Lucia, St. Vincent, The Grenadines, Trinidad and Tobago, Belize, and Guyana.
2. Applicants holding a first degree in English completed in either Europe (particularly in the United Kingdom or Ireland), United States of America, Canada, New Zealand, or Australia.
3. Applicants who do not fulfill the criteria of points 1. and 2. above, or applicants with English as their second language must pass an IELTS, TOEFL, or Cambridge Advanced English test before being admitted. The following tests and scores are accepted:
  - IELTS: min. score 6.5 (no band under 5.5)
  - TOEFL iBT: min. score 90
  - Cambridge Advanced: Passed (C1)

Language tests older than 2 years are not accepted (from the application deadline).

## § 3 PROGRAMME STRUCTURE

### 3a) Duration, total ECTS credits, and structure

The programme consists of courses and other requirements worth a total of 120 ECTS credits. This is equivalent to a duration of four semesters (a total of 3,000 60-minute credit hours). The programme is divided into:

- the Basic Semester Package (BSP - 30 ECTS) incl. the EnvEuro Introduction Days in August,
- two Advanced Semester Packages (ASP1 and ASP2 - 2 x 30 ECTS)
- and the master's thesis (30 ECTS).

General structure		
Home University	1 <sup>st</sup> semester BSP	EnvEuro Introduction Days in August (2 days) + the jointly taught e-learning course "Environmental Management in Europe" throughout the semester (15 ECTS).
		Compulsory and elective courses, 15 ECTS
	2 <sup>nd</sup> semester ASP1	Compulsory and elective courses, 30 ECTS

		Summer School (elective/free elective)
Host University	3 <sup>rd</sup> semester ASP2	Compulsory and elective courses, 30 ECTS
	4 <sup>th</sup> semester Thesis Work	Thesis, 30 ECTS

BSP ... Basic semester package  
 ASP ... Advanced semester packages

Within this master's programme, students will be studying at two of the four partner universities. The university where the student is accepted in the 1<sup>st</sup> programme year is referred to as "home university". The university chosen by the student to be the 2<sup>nd</sup> year university will be referred to as "host university". Students must spend one full academic year at each institution, i.e. BSP and ASP1 at their home university and ASP2 and the master's thesis at their host university. The thesis work must be assigned to the host university and is to be jointly supervised with the host university providing the main supervisor and the home university the co-supervisor. Students can do two ASPs within the same specialisation, or choose two different specialisations for ASP1 and ASP2, respectively. All courses are offered in English.

### 3b) Three-pillar principle

The three-pillar principle is the central identifying characteristic of both the bachelor's and master's programmes offered at BOKU. In the master's programme, the sum of the compulsory and elective courses at BOKU must be made up of at least

- 15% technology and engineering
- 15% natural sciences
- 15% economic and social sciences, law

The master's thesis and free electives are excluded from the three-pillar rule.

## § 4 COMPULSORY COURSES

The aim of the BSP is to bring students to a common level of knowledge and to establish a general background for the ASPs, and to introduce and train concepts, theories and requisites to be used throughout the programme. The BSP consists of 30 ECTS, where compulsory courses are amongst others the online course Environmental Management in Europe (EME) including an introduction week organized by the University of Copenhagen where students and lecturers will come physically to the same location.

### 4a) Basic Semester Package (BSP) - Home University BOKU

The following compulsory courses are required within the BSP to complete the master's programme:

<b>Basic Semester Package (BSP) 1<sup>st</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Environmental Management in Europe (E-Learning, European environmental law and administration) - including introduction week	SE	15
Lecture Series in Soil, Water and Atmosphere	VO	3

Within the BSP elective courses worth a total of 12 ECTS credits have to be chosen by students to complete the master's programme.

<b>Basic Semester Package (BSP) 1<sup>st</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Remote Sensing and GIS in Natural Resource Management	VO	3
Remote Sensing and GIS in Natural Resource Management	UE	3
Multiple Criteria Decision Making in Natural Resource Management	VS	3
Mountain hazard processes	VS	4.5
Mountain hazard processes - field trip	EX	1.5
Technology Assessment	VS	3
Institutions and Policies of the EU (Introduction to the Law and Politics of the European Union)	VO	3
On Site solutions for Water Supply and Sanitation	VO	3

#### 4b) Host University BOKU

<b>Basic Semester Package (BSP) 1<sup>st</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Environmental Management in Europe (E-Learning, European environmental law and administration) - including introduction week	SE	15
<i>Compulsory/Elective/Free elective courses at the home university</i>		15

For detailed information on the elective/free elective courses at the partner universities please refer to the homepages of the chosen home university, UCPH, UHOH, or SLU, and the homepage of the ELLS Master's Programme EnvEuro ([www.enveuro.eu](http://www.enveuro.eu)).

## § 5 ELECTIVE COURSES<sup>2</sup>

### Advanced semester packages (ASP)

Within the ASPs 60 ECTS credits are required to complete the master's programme. ASPs are selected by the students for the second and third semesters. Both 1<sup>st</sup> and 2<sup>nd</sup> ASP have to be chosen at the end of the first semester. This leaves sufficient time for the student to arrange where and how to physically move between 1<sup>st</sup> and 2<sup>nd</sup> ASP.

Six themes of specialisation are possible and there are no limitations to how students may combine the two ASPs, i.e. the student can select the two ASPs within the same specialisation or within two different specialisations.

Each partner university offers ASPs within at least 3 of the following specialisations

- Water Resources
- Environmental Impacts
- Soil Resources and Land Use
- Ecosystems and Biodiversity
- Environmental Management
- Climate Change

#### 5a) Home University BOKU

At BOKU, ASP1 and ASP2 consist of compulsory courses, elective courses and free elective courses whereas students have to complete courses worth a total of 30 ECTS credits in all offered specialisations.

#### ASP1 at BOKU: Water Resources

Advanced Semester Package (ASP1) 2 <sup>nd</sup> semester compulsory	Course type	ECTS credits
Course title		
Environmental Risk Analysis and Management	VO	3
Project Management	VU	3

Advanced Semester Package (ASP1) 2 <sup>nd</sup> semester elective	Course type	ECTS credits
Course title		
Possible Impacts of Climate Change on Water Resources	VO	3
Planning and Design in Water Supply and Wastewater Treatment	UE	3
Application of GIS in Hydrology and Water Management	VO	3
Environmental Chemistry <sup>3</sup>	SE	4.5
Biology, Chemistry and Microbiology for Civil Engineering	VU	3
Sediment Regime and River Morphology	VO	3

<sup>2</sup> Acknowledgement: The partner universities distinguish only between compulsory courses and elective courses ( $\triangleq$  free elective courses at BOKU)

<sup>3</sup> Only offered every second year (2014, 2016, ...)



Soil-bioengineering techniques (slopes and gullies)	VS	3
Physical and Selected Chemical Methods of Soil Analysis	PR	4.5
Protection and Mitigation Measures against natural hazards	VX	3
Valuation Methods for Natural Resources	VO	3
Water Resources Management in Developing Co-operation	VU	3
Industrial Water Management	VO	3
Advanced Topics on Hydroclimatology	US	3
Rural Water Management (advanced)	VO	3

### **ASP1 at BOKU: Soil Resources and Land Use**

<b>Advanced Semester Package (ASP1) 2<sup>nd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Environmental Risk Analysis and Management	VO	3
Soil Protection	VO	3

<b>Advanced Semester Package (ASP1) 2<sup>nd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Soil fertility and soil ecology in organic farming	VU	3
Soil Science Refresher	VX	3
Soil-bioengineering techniques (slopes and gullies)	VS	3
In-situ treatment of polluted soils and sediments: phytoremediation, in-situ fixation and attenuation techniques	UE	4.5
Mountain Risk Engineering	VX	4.5
Global Waste Management II	VO	3
Physical and Selected Chemical Methods of Soil Analysis	PR	4.5
Soil Pollution and Remediation	VU	3
Soil management in tropical and subtropical developing regions	VO	3
Valuation Methods for Natural Resources	VO	3
Soil properties and processes for ecological engineering	VU	3
Environmental Chemistry <sup>3</sup>	SE	4.5
Biology, Chemistry and Microbiology for Civil Engineering	VU	3

### **ASP1 at BOKU: Ecosystems and Biodiversity**

<b>Advanced Semester Package (ASP1) 2<sup>nd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Valuation Methods for Natural Resources	VO	3
Soil Fertility and Soil Ecology in Organic Farming	VU	3

<b>Advanced Semester Package (ASP1) 2<sup>nd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Agroforestry in Mountain Regions	VS	3
Ecologically Oriented Methods and Monitoring in River Engineering	VU	3
Biodiversity and Conservation of Mountain Forests	VS	2
Environmental Chemistry <sup>3</sup>	SE	4.5
Soil-Bioengineering Techniques (Slopes and Gullies)	VS	3

Biology, Chemistry and Microbiology for Civil Engineering	VU	3
Biocultural Diversity in Rural Landscapes	VS	3
Possible Impacts of Climate Change on Water Resources	VO	3
Participatory Methods in Development Research and Practice	SE	3
Fire Management in Mountain Forest Ecosystems - Prophylaxis and Control	VS	2
Soil Management in Tropical and Subtropical Developing Regions	VO	3
Scientific Writing	SE	1.5
Ecology of Aquatic Plants	VU	2

### **ASP1 at BOKU: Climate Change**

<b>Advanced Semester Package (ASP1) 2<sup>nd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Possible Impacts of Climate Change on Water Resources	VO	3
Environmental Risk Analysis and Management	VO	3

<b>Advanced Semester Package (ASP1) 2<sup>nd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Mountain risk engineering	VX	4.5
Atmospheric Pollution and Climate Change	VO	3
Globalisation and Rural Development	VO	3
Valuation Methods for Natural Resources	VO	3
Ecologically Oriented Methods and Monitoring in River Engineering	VU	3
Remote Sensing and Image Processing	VU	6
Resource and Environmental Economics	VO	3
Application of GIS in Hydrology and Water Management	VO	3
Flood Forecasting and Flood Protection	SE	3

In addition, one summer school offered within the Euroleague for Life Sciences ([www.euroleague-study.org](http://www.euroleague-study.org)) can be recognised as elective course in the ASP1 (max. 6 ECTS credits), if it is scientifically relevant for the specialisation and approved by the programme coordinator in the Individual Course Plan.

For detailed information about courses offered at the partner universities please refer to the homepages of UCPH, UHOH, or SLU and the homepage of the ELLS master's programme EnvEuro ([www.enveuro.eu](http://www.enveuro.eu)).

### **5b) Host University BOKU**

#### **ASP2 at BOKU: Water Resources**

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Water Resources Planning and Management	VO	3
On Site solutions for Water Supply and Sanitation	VO	3
<i>Master's Thesis Seminar<sup>4</sup></i>	SE	2

<sup>4</sup> Associated with the Master's Thesis in the 4<sup>th</sup> semester - compulsory

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Risk Assessment in the Aquatic Environment	VU	3
Integrated Flood Risk Management	VO	3
Computer based River Modelling	VU	3
Mountain forest climatology and headwater hydrology	VU	4.5
Modelling in Sanitary Engineering (Sewer, Treatment Plant and Receiver)	VU	4.5
On Site Solutions for Water Supply and Sanitation	VO	3
Simulation in Vadose Zone Environment	VU	3
Irrigation Design	VU	3
Computing Seminar on Hydraulics and Rural Water Management	UE	4.5
Hydrological Processes and modelling	VU	3

### **ASP2 at BOKU: Soil Resources and Land Use**

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Soil Conservation and Soil Protection	VU	3
Soil Water Management	VO	3
<i>Master's Thesis Seminar<sup>4</sup></i>	SE	2

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Soil Erosion Models and their Application	VU	4.5
Soil – Plant Science Workshop: From the hypothesis to publication I	SE	3
Soil Physics and Chemistry	VO	3
Simulation in Vadose Zone Environment	VU	3
Ecology and Management of the Rhizosphere in Ecological Engineering	UE	4.5
Mountain forest climatology and headwater hydrology	VU	4.5
Integrated Flood Risk Management	VO	3
Chemistry of soil water	VU	2
Protection of Natural Resources by Organic Farming	VS	3
Rhizosphere processes and application to agriculture and soil protection	VO	3
Specific methods in soil analysis (lecture)	VO	1
Specific methods in soil analysis (practical)	UE	1
Soils and food security	VO	1.5
Soils and Global Change	SE	4
Risk Management and Vulnerability Assessment	VS	3
Dynamics of geophysical flows	VS	3

### **ASP2 at BOKU: Ecosystems and Biodiversity**

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Risk Assessment in the Aquatic Environment	VU	3
Multiple Criteria Decision Making in Natural Resource Management	VS	3
<i>Master's Thesis Seminar<sup>4</sup></i>	SE	2

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Computer Based River Modelling	VU	3
Effects of air pollutants and nutrient deficiencies on mountain forests	VS	3
Mountain Forest Climatology and Headwater Hydrology	VU	4.5
Ecology and Management of the Rhizosphere in Ecological Engineering	UE	4.5
Soil Conservation and Soil Protection	VU	3
Modelling of mountain forest ecosystems	VS	2.5
Assessing Diversity in Forest Stands	VW	3
Innovations for Sustainable Forest Management	VS	4
Rhizosphere Processes and Application to Agriculture and Soil Protection	VO	3
Plant and Environment	VO	3
Soil Ecology	VO	3
Conservation Biogeography and Genetics	VS	3
Formulation of Questions and Experimental Design in Ecological Research	VS	4.5

### **ASP-2 at BOKU: Climate Change**

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester compulsory</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Meteorological Conditions and Precipitation	VS	3
Statistics of extreme events and geostatistics	VS	3
<i>Master's Thesis Seminar<sup>4</sup></i>	SE	2

<b>Advanced Semester Package (ASP2) 3<sup>rd</sup> semester elective</b>	<b>Course type</b>	<b>ECTS credits</b>
<b>Course title</b>		
Risk Assessment in the Aquatic Environment	VU	3
Mountain forest climatology and headwater hydrology	VU	4.5
Technology Assessment	VS	3
Risk management and Vulnerability Assessment	VS	3
Soil Conservation and Soil Protection	VU	3
Disaster management	VO	2
Innovations for Sustainable Forest Management	VS	4
Remote Sensing and GIS in Natural Resource Management	UE	3
Foresights – what future to expect? (Late lessons from early warnings)	VO	2

In addition, one summer school offered within the Euroleague for Life Sciences ([www.euroleague-study.org](http://www.euroleague-study.org)) can be recognised as elective course in the ASP2 (max. 6 ECTS credits), if it is scientifically relevant for the specialisation and approved by the programme coordinator in the Individual Course Plan.

In the ASP2 of the specialisation Climate Change, the e-learning course "Climate Change Impacts, Adaptation and Mitigation" (CCIAM) offered at UCPH (<http://www.climate-change.dk/>) can be recognised as elective course (15 ECTS).

For detailed information about courses offered at the partner universities please refer to the homepages of UCPH, UHOH, or SLU and the homepage of the ELLS master's programme EnvEuro ([www.enveuro.eu](http://www.enveuro.eu)).

## § 6 FREE ELECTIVES

Free electives may be selected from all courses offered by all recognized universities in Austria and abroad. Free electives are intended to impart knowledge and skills in the student's own academic subject as well as in fields of general interest.

If BOKU is chosen as the home university, students have to successfully complete free elective courses worth a total of 9 ECTS credits – 3 ECTS credits in the BSP and 6 ECTS credits in ASP1.

If BOKU is chosen as the host university students have to successfully complete free elective courses worth a total of 6 ECTS credits in ASP2.

## § 7 MASTER'S THESIS

A master's thesis is a paper on a scientific topic, to be written as part of a Master's degree Programme (*for exceptions please see the By Laws (Satzung) of the University of Natural Resources and Life Sciences, Vienna, part III- Teaching, § 30[9]*). The thesis is worth a total of 30 ECTS credits. With their master's theses, students demonstrate their ability to independently address a scientific topic, both thematically and methodologically (§ 51 [8] UG 2002 BGBl. I no. 81/2009).

The topic of a master's thesis shall be chosen in such a way that it is reasonable to expect a student to be able to complete it within six months. Multiple students may jointly address a topic, provided that the performance of individual students can be assessed (§ 81 [2] UG 2002 BGBl. I no. 81/2009).

If BOKU is the host university, the attendance to a master's thesis seminar is required.

Each student has two thesis supervisors, the main supervisor from the university where the thesis work is physically located and a co-supervisor from one of the other partner universities. The expertise of the main supervisor needs to fall within the thesis theme.

The master's thesis shall be written in English. The thesis defensio must be held in English. The master's thesis has to be completed and defended at the host university, and must be co-supervised by the home university. The co-supervisor should be integrated in the thesis defensio (via video conference).

## **§ 8 COMPLETION OF THE MASTER'S PROGRAMME**

The EnvEuro programme has been completed when the student has passed all required courses and received a positive grade on the master's thesis and defensio.

## **§ 9 ACADEMIC DEGREE**

Graduates of the EnvEuro programme are awarded the academic degree Master of Science, abbreviated as MSc or M.Sc. The academic degree MSc (M.Sc.), if used, shall follow the bearer's name (§ 88 [2] UG 2002 BGBl. I no. 81/2009).

## **§ 10 EXAMINATION REGULATIONS**

(1) The EnvEuro programme has been completed successfully when the following requirements have been met:

- positive completion of the BSP worth a total of 30 ECTS credits (§ 4)
- positive completion of ASP-1 and ASP-2 worth a total of 60 ECTS credits (§ 5)
- a positive grade on the master's thesis and the defensio (§ 6)

(2) Student evaluation takes the form of course and module examinations. Course examinations can be either written or oral, as determined by the course instructor, taking the ECTS credit value of the course into account. Any prerequisites for admission to examinations shall be listed in § 4 under the respective course/module.

(3) The choice of examination method shall be based on the type of course: Lectures shall conclude with a written or oral examination, if continuous assessment of student performance is not applied. Seminars (SE) and project-based courses (PJ) can be evaluated based on independently written papers, length and contents of which are determined by the course instructor. For all other course types, the examination type is at the instructor's discretion.

(4) After the successful completion of all the courses and examinations required in the master's programme, the completed master's thesis, after it has been given a positive evaluation by the thesis supervisor and co-supervisor, shall be publically presented by the student and defended in the form of an academic discussion (defensio). The committee shall consist of a committee chair and two additional university teachers with a *venia docendi* or equivalent qualification. The student's total performance (thesis and defensio) will be assigned a comprehensive grade. Both thesis and defensio must receive a passing grade for the student to complete the programme. The written evaluations stating the rationale for the thesis grade and the defensio grade are included in calculating the comprehensive grade and are documented separately.

The comprehensive grade is calculated as follows:

- Master's thesis: 70%
- Defensio (incl. presentation): 30%

(5) A comprehensive evaluation of the student's performance on the entire programme shall be assigned. A comprehensive evaluation of "passed" means that each individual component

of the programme was completed successfully. If individual components of the programme have not been successfully completed, the comprehensive evaluation is “failed”. A comprehensive evaluation of “passed with honours” is granted if the student has received no grade worse than a 2 (good) on all individual components, and if at least 50% of the individual components were graded with 1 (excellent).

## **§ 11 TRANSITIONAL PROVISIONS**

Students who are subject to the master’s curriculum Environmental Sciences - Soil, Water, Biodiversity (EnvEuro) (H 066 449, version October 1, 2014) that was in action to date, are entitled to complete their study programme until November 30, 2018.

For those students who are repositioned to this master’s programme after the transitional period or who voluntarily switch to this master’s programme, examinations for courses taken under the provisions of the previously valid curriculum shall be recognized towards the new programme under the provisions of this curriculum based on the list of equivalent courses.

## **§ 12 EFFECTIVE DATE**

This curriculum shall take effect on October 1, 2015.

## **ANNEX A      TYPES OF COURSES**

The following types of courses are available:

### **Lecture (VO)**

Lectures are courses in which certain areas of a subject and the methods used in this area are imparted through didactic presentation.

### **Exercise course (UE)**

Exercise courses are courses in which students are instructed in specific practical skills, based on theoretical knowledge.

### **Practical course (PR)**

Practical courses are classes in which students deal with specific topics independently, based on previously acquired theoretical and practical knowledge.

### **Compulsory internship seminar (PP)**

The compulsory internship seminar is a class in which students deal independently with topics related to their internship placements, based on previously acquired theoretical and practical knowledge.

### **Seminar (SE)**

Seminars are courses in which students are required to work independently on the respective subject, deepen their knowledge of the topic and discuss relevant issues.

### **Field trips (EX)**

Field trips are courses in which students have the opportunity to experience relevant fields of study in real-life practical application, to deepen their knowledge of the respective subject. Field trips can be taken to destinations both in Austria and abroad.

### **Master thesis seminar (MA)**

Master thesis seminars are seminars intended to provide students with academic support during the thesis writing process.

### **Mixed-type courses:**

Mixed-type courses combine the characteristics of the courses named above (with the exception of project-type courses). Integration of different course-type elements improved the didactic value of these courses.

### **Project course (PJ)**

Project courses are characterized by problem-based learning. Under instruction, students work - preferably in small groups - on case studies, applying appropriate scientific methods.

### **Lecture and seminar (VS)**

### **Lecture and exercise (VU)**

### **Lecture and field trip (VX)**

### **Seminar and field trip (SX)**

### **Exercise and seminar (US)**

### **Exercise and field trip (UX)**