



Universität für Bodenkultur Wien
BOKU University, Vienna

Curriculum

for the Master Programme in

Environment and Bio Resources Management Programme

Programme classification no. 066 427

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For legal purposes, only the version of the curriculum that has been published in the official journal (Mitteilungsblatt) is binding and valid - this English translation is for information purposes only.

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**Curriculum of the Master Degree Programme
“Environment and Bio Resources Management”**

At the University of Natural Resources and Life Sciences, Vienna

As at October 1st, 2025

§1 QUALIFICATION PROFILE

The Master programme in Environment and Bio Resources Management 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

Graduates of the Master study programme Environment and Bio Resources Management (UBRM) are equipped with empirical and analytical skills as well as multidisciplinary competences which are relevant in order to develop interdisciplinary solutions in an operational as well as social context. Graduates are enabled to understand, analyse and practically work with complex problems and interrelationships in the fields of environmental and bio resources management using disciplinary as well as interdisciplinary methods. Doing so, they can fall back on skills which were imparted in the context of business-management, economics, political sciences, jurisprudence as well as sociology.

The students acquire the following qualifications in three compulsory areas and advanced studies (learning results are shown in detail under §5a):

- *Environment-oriented business studies:* Graduates have the ability to better understand and to develop environmentally relevant decision-making processes on an operational level.
- *Environmental politics and legislation:* Graduates are enabled to understand and evaluate political decision-making processes and the role of political stakeholders. They can understand legal problems and can handle authorisation processes competently.
- *Environmental and resource economics:* Graduates have the ability to understand environmental and resource economic problems and interrelations. They can connect these with methodological skills and apply them with regards to an efficient and sustainable environment and resource management.

The proficiencies and skills of the graduates in the fields of economics, social sciences and jurisprudence mentioned above are connected with one or two of the following specialist divisions based on their focus. Each focus imparts in-depth knowledge and skills in the fields of natural sciences and engineering sciences. (The learning results of the following specialist divisions are shown in detail under § 5b):

- *Waste material*: Graduates have an understanding for the interrelations in complex waste management systems, especially in those areas where socially relevant aspects have to be considered.
- *Biodiversity / nature conservation / land use*: Graduates gained expertise of biological theories, concepts and tools in respect to the acquisition, assessment and monitoring of biodiversity and land use.
- *Soil*: Graduates are equipped with knowledge and skills of the ecosystem services of soil and for its optimization as well as of possibilities of soil rehabilitation and soil protection in the context of global change.
- *Energy*: Graduates know of and are able to apply their engineering knowledge in fields such as energy supply, energy use, energy transformation and energy management.
- *Climate*: Graduates have knowledge of problem areas of climate change in respect to the natural sciences, socio-economics and politics and are capable to develop strategies for solutions.
- *Mobility / transportation*: Graduates are equipped with socio-economic knowledge of mobility and transportation as well as traffic planning and management based on technical sciences and natural sciences. They have knowledge of the optimized handling of transportation using already existing infrastructures.
- *Regional development*: Graduates gained expertise in fundamental theories and models which help explain regional development and are able to apply comparative analyses of regions with respect to their regional economic, socio-cultural and landscape characteristics.
- *Social ecology*: Graduates have gained expertise in fundamental theories and methods of social ecology and are able to comprehend, analyse and work practically with complex problems and socio-ecological interrelationships in the context of sustainable development using interdisciplinary and transdisciplinary methods.
- *Environmental information management*: Graduates gained knowledge and skills in the fields of management, modelling and assessment of environmental data.
- *Water*: Graduates are equipped with socio-economic and ecologic-technical knowledge and skills when it comes to the development and application of sustainable water management concepts.

When a minimum of 31 ECTS credits in one of the above stated specialist divisions is completed successfully, this specialisation can be explicitly stated in the graduation papers upon request by the student.

The interdisciplinary and application-oriented positioning of this Master study programme establishes the understanding for the complex connections and interrelations of humans, environment and technics. These competences enable the graduates to work in various fields related to sustainable environment and bio resource management, both on an operational and social level.

1b) Professional Qualifications

Due to the interdisciplinary orientation of the Master study programme Environment and Bio Resources Management a wide range of activities and occupations open up for graduates depending on their chosen professional specification. Selected fields of activities include

management and leading tasks in businesses and public institutions, such as the composition of reports on sustainability, organization and supervision of stake holder processes, development and realization of business plans, or the monitoring and realization of legal environment and nature conservation sanctions. Graduates of the Master study programme Management of Environment and Bio Resources work in the following sectors:

Public Sector:

- public administration (county, province and federation)
- international organisations
- environment-, energy- and regional development agencies

Non-Profit Sector:

- lobbies, associations and co-operatives
- non-governmental organisations
- educational and research institutions

Private Sector:

- commerce, industry and trade
- utility and waste management companies
- consulting and civil engineering offices
- media and public relations
- insurance companies and financial service providers

§2 ADMISSION REQUIREMENTS

Graduates of the following Bachelor programmes offered by BOKU University of Natural Resources and Life Sciences are eligible for admission with no further requirements:

033 225 Forestry

033 227 Environment and Bio Resources

033 255 Agricultural Sciences

For graduates of Bachelor programmes completed at other universities, mastery of the following learning outcomes is required for admission:

Basic knowledge in

- economics and social sciences,
- natural sciences,
- engineering as well as
- methods of empirical research.

The basic knowledge required in the economic and social sciences comprises of environment and resource oriented business administration and economics as well as environment and resource oriented political sciences and jurisprudence.

The basic knowledge required in the natural sciences comprises of physics, chemistry, ecology as well as land use.

The basic knowledge required in the engineering sciences comprises of process, energy and environmental technology. The required fundamental knowledge on empirical research comprises the quantitative and qualitative methods of data acquisition and evaluation.

Furthermore, competences in English at a level of B2 (according to the Common European Framework of Reference for Languages by the Council of Europe) are recommended.

§ 3 PROGRAMME STRUCTURE

3a) Duration of the Programme

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).

3b) Overview of the Programme: Total ECTS Credits and Structure

The programme is divided into:

Compulsory courses:	26 ECTS credits, including
Master seminar:	2 ECTS credits
Advanced studies:	21 ECTS credits
Specialist divisions:	31 ECTS credits
Master's Thesis:	30 ECTS credits
Free electives:	12 ECTS credits

Compulsory Courses:

26 ECTS credits (see § 4)			
Methodological basis	Environment-oriented business studies	Environmental politics	Environmental and resource economics

Advanced Studies:

21 ECTS credits (see § 5)		
Environment-oriented business studies	Environmental politics and legislation	Environmental and resource economics

In advanced studies 21 ECTS credits have to be completed successfully. At least one course of each of the three advanced study divisions has to be completed successfully.

Specialist Divisions:

31 ECTS credits from one or two divisions (see § 5)		
Climate	Water	Waste management
Energy	Regional development	Biodiversity / land use
Mobility / transport	Environmental information management	Soil
Social Ecology		

In one or two specialist divisions courses to the extent of 31 ECTS credits have to be completed successfully. In the specialist division(s) chosen by the student, the successful completion of all identified courses (see § 5) and an expert seminar are compulsory. When a minimum of 31 ECTS credits in **one** of the specialist divisions is completed successfully, this specialisation can be explicitly stated in the graduation papers upon request by the student.

3c) Three-Pillar Principle

The three-pillar principle is one of the central identifying characteristics of both the Bachelor and Master programmes offered at the University of Natural Resources and Life Sciences, Vienna. In the Master programmes, the sum of the compulsory and elective courses must be made up of at least

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

The Master's Thesis, compulsory internship and free electives are excluded from the three-pillar rule.

3d) Limited Number of Participants in Courses

For courses with a limited number of participants the head of the Master course is authorised to first admit students enrolled in the Master programme (that means that students enrolled in a Bachelor study programme can only be admitted to the courses if further spaces are left on the course!) The admission of students enrolled in the Master study programme is conducted according to the following order of required courses by the students: compulsory course, elective course, free elective course.

§ 4 COMPULSORY COURSES

Used Abbreviations:

ECTS = European Credit Transfer System

WS = Winter Semester

SS = Summer Semester

Notes:

- 1) In English
- 2) In English and German
- 3) Courses not offered in the academic year 2024/25
- 4) Courses only offered in uneven years (e.g. 2021/22, 2023/24)
- 5) Courses only offered in even years (e.g. 2022/23, 2024/25)

26 ECTS credits taken from the compulsory courses have to be completed successfully, whereby 6 ECTS credits each have to be completed in the areas of methodological foundations, environmentally oriented business studies, environmental politics as well as environment and resource economics.

Compulsory Module: Methodological Basis		
Course Title	Course Type	ECTS Credits
Advanced Statistical Methods	VU	3
Case-Oriented Methods of Qualitative Research: Design and Analysis	VS	3

Compulsory Module: Environment-Oriented Business Studies		
Course Title	Course Type	ECTS Credits
Corporate Environmental Economics	VO	3
Environmental Cost Accounting and Controlling	VU	3

Compulsory Module: Environmental Politics		
Course Title	Course Type	ECTS Credits
Science in Politics and Society	VS	3
Governance of Sustainable Development	SE	3

Compulsory Module: Environmental and Resource Economics		
Course Title	Course Type	ECTS Credits
Economics of Externalities and Social Resources	VO	3
Economics of Sustainable Land Use under Global Change	VO	3

Learning outcomes: Graduates have acquired basic and special knowledge in the areas of environment-oriented business studies, environmental politics, environmental and resource economics as well as the computer-based application of statistical and qualitative methods.

Master Seminar		
Course Title	Course Type	ECTS Credits
Master's thesis seminar	SE	2

§5 ELECTIVE COURSES

5a)

Courses to the extent of 21 ECTS credits taken from the three advanced study areas (i) environment-oriented business studies, (ii) environmental politics and legislation and (iii) environmental and resource economics have to be completed successfully.

Students of the Master programme have to complete at least one course in each of the three advanced study areas.

(i) Advanced Studies: Environment-Oriented Business Studies		
Course Title	Course Type	ECTS Credits
Logistic systems	VS	6
Market research and market analysis	VU	3
Innovation processes in the forest-based bioeconomy ¹	SE	2
Business management I	VU	3
Environmental management and environmental information systems for businesses	VO	3
Market-oriented innovation processes ¹	VS	3
Consumer behaviour	VO	3
System analysis, strategic planning and policy modelling with system dynamics ¹	VU	3

Learning outcomes : Graduates are familiar with environmentally relevant decision-making processes on an operational level. They know the essential possibilities of data acquisition, - structuring and -analysis and can apply their gained information in an innovative way for a sustainable corporate management. Furthermore, students know the complex environment requirements which businesses need to act in accordance with and are able to assess these economically. They are also familiar with the basics of developing marketing strategies and can also evaluate corporate aspects such as logistic questions in an appropriate way.

(ii) Advanced Studies: Environmental Politics and Legislation		
Course Title	Course Type	ECTS Credits
Policy of nature protection and environmental policy	SE	3
Understanding and overcoming denial and hypocrisy in the climate crisis	VO	3
Governance and politics in the climate crisis	SE	4
Climate and resource policy ¹	SE	3
Conflicts in the environmental policy field	SE	3
Participation and conflict resolution	VS	3
Seminar environmental law	SE	3
Environmental law aspects of industrial installations	VU	3
Applied environmental impact assessment	VO	2
Institutional innovation and sustainability transformation ¹	VU	3
Long-term socio-ecological research	VS	3

Learning outcomes: Graduates are familiar with political decision-making processes, the role of political stakeholders and the essential governmental and non-governmental mechanisms and instruments of social regulation in the field of environment. They also understand the complex interrelations of knowledge, evidence and politics respectively. Students can also comprehend legal problems and support authorisation procedures and legal compliance registers for businesses realized by lawyers.

(iii) Advanced Studies: Environmental and Resource Economics		
Course Title	Course Type	ECTS Credits
Advanced natural resource economics	VO	3
Growth, development, trade and environment ¹	VO	3
Game theory in environmental and natural resource management ¹	VO	3
Econometrics	VO	3
Advanced seminar in environmental and resource economics	SE	3
Computer simulation in energy and resource economics ¹	VS	3
Managerial economics ¹	VU	3
Applied mathematical programming in natural resource management ¹	VS	3
Econometrics - seminar	SE	3
Mathematical modelling in life sciences	VU	3
Alternative forms of economic organization in theory and practical experience	SE	3

Learning outcomes: Graduates are familiar with the most important theories, concepts and methods of environment and resource economy. The knowledge of theoretical and conceptual foundations comprises of static and intergenerational efficiency of the allocation of re- sources, the optimal pollution and pollution regulation for point source pollution and non-point source pollution and the optimal offer of public goods. Students gain their methodical skills in respective courses in the fields of econometrics, theory of games, computer simulation and mathematical programming. With this knowledge of theory and their methodical skills students gain the competence to formulate recent environment and resource problems in an analytically precise way. Furthermore, they can establish relationships and solutions which account for a sustainable development.

5b)

Positive completion of courses to the extent of 31 ETCS credits from **one** or **two** specialist divisions. When one or two specialist divisions are chosen, the courses from one or two specialist divisions marked with **) must be completed successfully. The other courses can be freely chosen from the one or two chosen specialist divisions.

Furthermore, a course marked as specialist seminar to an extent of 3 and 5 ECTS credits must be chosen from the one or one of the two chosen specialist divisions.

When a minimum of 31 ECTS credits in one of the stated specialist divisions is completed successfully, this specialisation can be explicitly stated in the graduation papers upon re-quest by the student.

Specialist Division: Climate		
Course Title	Course Type	ECTS Credits
**) Climate change scenarios and regional impact ^{1,3}	VS	3
**) Global change ecology	VO	3
**) Governance and politics in the climate crisis	SE	4
Seminar in global change and ecosystems ¹	SE	2
Ecosystem dynamics and their effect on greenhouse gases ¹	VO	3
Characteristics of climate in Austria	VO	2
Possible impacts of climate change on water resources ¹	VO	3
Global change aspects in crop production	VO	3
Tourism and leisure planning	VU	3
Air Emission Protection	VO	2
Energy Engineering ¹	VO	3
Weather, Climate, and Society ¹	VU	3
Meteorological Hazards and Climate Extremes ¹	VU	3
Meteorological Data Analysis and Visualization ¹	VU	3
Paleoclimate for the Future	VU	3
Special Seminars		
Global Change and Sustainability and Their Security Policy Relevance	SE	3

Sustainability Challenge	PJ	4
Grand Challenges in Climate Research ¹	SE	3
Global Change and Sustainability and Their Security Policy Relevance	SE	3

Learning outcomes: The specialist division allows insights into the multifaceted aspects of climate change. There is an intensive investigation of the problems regarding natural sciences, socio-economics and politics. A special focus hereby lies on the regional impact but also on options of action of these global challenges as well as on the interaction with the protection of the environment. Graduates have a deep understanding of the relevant components of climate change and are enabled to work together with experts and pressure groups in order to develop, support and supervise strategies and measures required for the realization of such strategies.

Specialist Division: Water		
Course Title	Course Type	ECTS Credits
**) Water policy ³	VS	3
**) Hydrological processes and water resource management ¹	VO	3
**) Risk management and vulnerability assessment ¹	VS	3
Water legislation ¹	VO	2
Hydro-electric energy and electricity market	VO	2
Solution of conflicts between ecological integrity and engineering of rivers	VO	3
Data mining and data management in aquatic ecology ¹	VU	3
Application of GIS in hydrology and water management ^{1,3}	VU	3
Water hygiene ³	VO	3
Ecological river landscape management ¹	VO	2
Human impacts in riverine landscapes ¹	VO	2
Selected chapters in ecology of aquatic environments	VO	3
Environmental impact assessment for small hydropower plants ³	VO	1
Water law	VO	3
River maintenance and design ³	VO	2
Specialist Seminar:		
Seminar - water (UBRM)	SE	3

Learning outcomes: Graduates complement their socio-scientific and economic abilities with natural-scientific and engineering knowledge in the field of water management. This allows to also incorporate socio-economic and ecologic-technical aspects in the development and application of sustainable water management concepts. Graduates are enabled to work together with experts and pressure groups in order to develop, support and supervise strategies and measures required for the realization of such strategies.

Specialist Division: Waste Management		
Course Title	Course Type	ECTS Credits
**) Waste logistics	VO	2
**) Waste technology	VO	3
**) Waste management policy	VS	4.5
Research reports of waste management	VS	1
Operational waste law	VO	2
Global waste management II ¹	VO	3
Chemistry and analysis of waste	VO	2
Planning and assessment of waste management systems ¹	VU	3
Environmental bioprocess engineering ^{1,3}	VO	4
Life cycle management ¹	VO	2
Monitoring of emissions from biological waste treatment processes	VU	3
Contaminated sites and soil protection	VO	2
Environmental toxicology	VO	3
Air pollution control and climate protection	VU	3
Soil protection ¹	VO	3
Soil physics and chemistry ¹	VO	3
Ecosystem dynamics and their effect on greenhouse gases ¹	VO	3
Water quality assessment	VU	4.5
Specialist Seminar:		
Seminar waste management	SE	4.5

Learning outcomes: Graduates have an understanding of the interrelations found in complex waste management systems, especially in those areas where socially relevant aspects have to be kept in mind (such as charge fee models, user-friendliness of collecting systems, consumer behavior). They can develop solution-based strategies and support the realization of these. Furthermore, they have a basic understanding for the technical and natural scientific components of waste management planning.

Specialist Division: Energy		
Course Title	Course Type	ECTS Credits
**) Electro-energy-technics	VO	3
**) Energy engineering ¹	VO	3
**) Energy economics	VO	3
Refrigeration and Air-Conditioning ¹	VO	3
Applied Measurement and Control Systems ¹	VU	3
Energy Water Management and Electricity Market	VO	2
Sustainable Design and Construction ¹	VO	3

Building Physics ¹	VO	3
Building Physics ¹ – Exercise	UE	3
Fluidization Engineering ¹	VU	4
Environmental Technology Practical	PR	3
Practical Course in Energy Engineering ¹	PR	3
Energy Policy	VS	3
After Hiroshima and Fukushima: Nuclear Safety or Acute Danger?	VO	2
Technology Assessment and Risk Management Considering Wind Power Plants ¹	SX	3
Future Energy Supply Depending on Resource Availability	SE	3
Technology Assessment	VS	3
Expert Seminar:		
Energy Economics Seminar	SE	3

Learning outcomes: Graduates have knowledge in the engineering scientific areas of energy supply, energy use and energy management. Apart from that, they are well grounded when it comes to questions of recourse-oriented construction work and building physics as well as the long-term development and assessment of energy-technology. Technical unit operations are assessed energetically as well as exegetically and are subject to improvement by variation of the process parameters. Thereby, set targets are closed material cycles whenever possible and an improvement of the energy efficiency while at the same time minimizing the impact for the environment.

Specialist Division: Regional Development		
Course Title	Course Type	ECTS Credits
**) Special spatial planning	VO	2
**) Rural development ¹	VO	3
**) Socio-cultural aspects of regional development	VO	3
Methods of rural regional development	VO	3
Spatial planning and regional policy	VO	3
Agro-Food Studies	VO	3
Excursion on regional development	EX	3
Sustainable spatial development and energy transition ¹	VS	6
Alpine spatial planning	VO	2
Tourism planning	VU	3
Strategies and instruments of recreation planning	VO	3
Spatial research in a rural context	VO	2
Development and regional management – Seminar	SE	3
Facilitating change for sustainable development ¹	VS	6
Participatory methods in development research and practice ¹	SE	3
Sustainability strategies	SE	3
Specialist seminar:		
Regional Development	SE	4

Learning outcomes: Graduates know the basic theories and models for the explanation of regional development. They can conduct comparative analyses of regions regarding characteristics of their regional-economics, socio-cultures and natural spaces. They know the fundamental developmental strategies, organizations, planning instruments and mechanisms for the regulation of regional development. By that, they are well grounded to supervise and evaluate development projects on their own.

Specialist Division: Biodiversity/ Land Use		
Course Title	Course Type	ECTS Credits
**) Integrated landscape management	VS	6
**) Biodiversity of ME cultural landscape	SE	3
Animal species of conservation concern and their habitat demands	VO	2
Forest ecosystem dynamics	VS	4
Conservation biogeography and genetics ¹	VS	3
Rating and mapping of nature conservation aspects in landscape planning	VO	3
Biological monitoring (theory and practice)	VS	3
Applied landscape management	VS	4.5

Programs and subsidies for landscape development	VS	3
Nature and landscape conservation economics	VO	3
Cultural landscape and ecotourism	VO	2
Specialist Seminar:		
Nature conservation in practice	SE	4.5

Learning outcomes: Graduates know about biological theories, concepts and tools in respect to the acquisition, assessment and monitoring of biodiversity; about relevant subjects of protection (on all levels of biodiversity, ranging from the genetic level to species, habitats and landscapes), whereby the understanding of functional interrelations, biological interactions and dynamic processes is in the foreground. Essential learning results are the ability to integrate ecologic and social goals when it comes to the management of biological resources and to convincingly argue and transfer nature conservation as a social concern.

Specialist Division: Transport / Mobility		
Course Title	Course Type	ECTS Credits
**) Strategic planning in transport	VS	2
**) Green logistics ¹	VU	3
**) Road planning and environmental protection	VU	4
Transport planning and policy	VO	1
Traffic and transport planning ¹	SE	3
Public transport	SE	2
Road safety	VO	2
Pedestrian and bicycle traffic	VO	2
Traffic psychology	VO	2
Transport planning and highway engineering ⁵	VU	3
Transport telematics	SE	2
Traffic forecast and traffic models	VU	3
Road operation and maintenance	VO	2
Intermodal traffic	VO	2
Applied system dynamics modelling in transport ¹	VS	3
Minor rural roads	VO	2
Introduction to research methods in transport analysis ^{1,5}	SE	2
Mobility surveys and data analyses	VU	3
Specialist Seminars:		
Development of a transport master plan for a town	SE	4

Learning outcomes: Graduates are equipped with knowledge in the field of socio-economics of mobility and transport as well as of technical and natural scientific transport planning in terms of optimized handling of traffic based on already existing infrastructure. Special attention is turned to the interaction of various traffic types (non-motorized, motorized, individual traffic, freight transportation and public transport) as well as on the consequences of traffic on other social areas of interest, such as environment or transport safety. An essential learning outcome is an all-embracing understanding for causes, development and effects of mobility and traffic. Thereby a smooth collaboration with specialists, for example from the technical / constructive segments of the specialist field can be ensured. Furthermore, a basis is created in order to get active in the field of traffic management in its broadest context.

Specialist Division: Environmental Information Management		
Course Title	Course Type	ECTS Credits
**) Selected topics of geo-data management	VS	3
**) Environmental statistics ¹	VU	3
**) Valuation methods for natural resources ¹	VO	3
Advanced level remote sensing and GIS	VU	3

Advanced GIS in landscape - planning	VU	4.5
Statistics with R ¹	VU	2
Programming with R	VU	2
Exploratory data analysis with R ¹	VS	3
Statistics of extreme events and geostatistics ¹	VS	3
Vulnerability and risk management	VS	2.5
Computer simulation in energy and resource economics ¹	VS	3
Applied mathematical programming in natural resource management ¹	VS	3
Uncertainties in hydrological and ecosystem modelling ^{1,4}	VU	3
Specialist Seminar:		
Interdisciplinary seminary environmental information management	SE	4

Learning outcomes: Environment and bio resources are the result of spatiotemporal processes. For their assessment, information on their spatial condition and their chronological dynamics is necessary. Graduates are equipped with knowledge and skills of fundamental and deepening methods for management, modelling and assessment of environmental data that have a spatiotemporal reference. These include the keeping of data, data management, visualization and analysis with the help of geographical information systems (GIS), basics of modelling (environmental statistics) as well as the economic assessment of model data by means of multi-criteria planning and risk analysis. Students are enabled to interpret existing evaluations of environment and bio resources, to critically assess those and to conduct independent evaluations.

Specialist Division: Soil		
Course Title	Course Type	ECTS Credits
**) Biogeochemistry of soils ¹	VU	3
**) Soil protection ¹	VO	3
**) Field course soil ecology ¹	UE	3
Soils and food security ¹	VU	2
Soil physics and chemistry ¹	VO	3
Soil microbiology	VO	3
Soil chemistry laboratory ¹	UE	3
Soil physics - exercises in the laboratory ³	UE	3
Soil microbiology course ¹	UE	4
Soil indicators ¹	VO	3
Soil ecology ¹	VO	3
Soil zoology	VO	3
Role of soils in nature conservation and wildlife management ¹	VU	1.5
Molecular microbial ecology of soils ¹	VU	3

Soil legislation ³	VO	3
Contaminated sites and soil protection	VO	2
Soil - water - landscape ⁴	VO	3
Land policy and land rearrangement	VO	2
Biogeochemistry of forest ecosystems	VS	3
Ecology of roots and mycorrhizae I ¹	VU	3
Ecology of roots and mycorrhizae II ¹	US	3
Experimental methods in forest ecology ²	VS	3
Specialist Seminar:		
Soils and global change ¹	SE	4

The participation in the course 'Ecology of roots and mycorrhizae I' is required for the participation in the course 'Ecology of roots and mycorrhizae II'.

Learning outcomes: Graduates have a comprehensive understanding of the ecosystem services of soil and for its optimization, of conflicting use and possibilities of soil rehabilitation as well as soil protection in times of global change. The understanding of functional interrelations, interactions and dynamic processes is in the foreground. Learning results are the ability to accommodate the cultivation of land to the community, the synthesis of knowledge on soil fertility and optimization of the cultivation of land with regards to the appropriation of foods and animal feed, fibres and fuel. Graduates should be in the position to integrate ecological and social aims with respect to the management of the resource soil and they should be enabled to convincingly reason and realize soil protection as a social concern.

Specialist Division Social ecology		
Course Title	Course Type	ECTS Credits
**) Social ecology and sustainable development ¹	VO	3
**) Basics of social ecology	SE	4
**) Biophysical concepts and methods of social ecology: Introduction ¹	VS	3
Methods of social ecology: Societal metabolism	VU	4
Methods of social ecology: Land use research	VU	4
Methods of social ecology: Social sciences and humanities ³	VU	4
Social ecology of the Anthropocene	VO	3
Biomass in the context of the global food system	SE	3
Sustainable resource use	VS	3
Land use and global change: Socio-ecological interactions ¹	VS	3
Integrated socio-ecological and climate modelling ¹	VS	3
Environmental and climate justice ¹	VU	3
Political ecology of resource use	SE	3
Long-term socio-ecological research	VS	3

Guided Reading: Long-term socio-ecological research and environmental history ¹	SE	3
Specialist Seminar:		
Social Ecology	SE	4

Learning outcomes: Graduates have gained a basic understanding of socio- ecological systems and society-nature interactions in the context of globalisation, global change and sustainable development. They have gained an overview of the key thematic areas of social ecology (societal metabolism, land use research, environmental history, socio-ecological transformation) and are able to apply socio- ecological methods for analysing the issues of interdisciplinary sustainability research.

§6 FREE ELECTIVES

Free electives worth a total of 12 ECTS credits are required to complete the Master programme. 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. It is recommended that student focus on courses taught in a foreign language.

§7 MASTER'S THESIS

A Master's Thesis is a paper on a scientific topic, to be written as part of a master degree programme (*for exceptions please see the By Laws of the University of Natural Resources and Life Sciences, Vienna, § 86[9]*). The thesis is worth a total of 30 ECTS credits. With their Master's Thesis, 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).

The Master's Thesis shall be written in German or English. Languages other than German or English are permissible only if approved and confirmed by the thesis supervisor. The thesis defence must be held in German or English regardless of the language of the thesis.

§8 COMPLETION OF THE MASTER PROGRAMME

The Master programme in Environment and Bio Resources Management has been completed when the student has passed all required courses and received a positive grade on the Master's Thesis and defence examination.

§9 ACADEMIC DEGREE

Graduates of the Master programme in Environment and Bio Resources Management are awarded the academic title Diplom-Ingenieur (m) or Diplom-Ingenieurin (f), abbreviated as Dipl.-Ing./ Dipl.-Ing.ⁱⁿ or DI/DIⁱⁿ. The academic title Dipl.-Ing./Dipl.-Ing.ⁱⁿ or DI/DIⁱⁿ, if used, shall precede the bearer's name (§ 88 [2] UG 2002 BGBl. I no. 81/2009).

§10 EXAMINATION REGULATIONS

(1) The Master programme in Environment and Bio Resources Management has been completed successfully when the following requirements (corresponds to components in [7] be-

low) have been met:

- positive completion of compulsory courses worth a total of 26 ECTS credits (§ 4),
- positive completion of advanced studies worth a total of 21 ECTS credits (§ 5),
- positive completion of courses in one or two specialist divisions worth a total of 31 ECTS credits (§ 5),
- positive completion of free electives worth a total of 12 ECTS credits (§ 6),
- positive completion of the Master seminar worth a total of 2 ECTS credits (§ 6),
- a positive grade on the Master's Thesis and the defence examination.

(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 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 and project-based courses 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) The topic of the Master's Thesis shall be selected from one of the subjects of the Master programme. The student must inform the dean in writing prior to the commencement of the work on the Master's Thesis. Thereby, the student has to state the Master's Thesis topic as well as the name of the supervisor of the Master's Thesis.

(5) The completed Master's Thesis which has been assessed positively by the supervisor shall be publicly presented by the student and defended in the form of an academic discussion (defence examination) after successful completion of all courses. The examination committee shall consist of a committee chair and two additional university lecturers with a *venia docendi* or equivalent qualification. The student's total performance (thesis and defence examination) will be assigned a comprehensive grade. Both thesis and defence examination must receive a passing grade for the student to complete the programme. The written evaluations stating the grounds for the thesis grade and the defence examination grade are included in calculating the comprehensive grade and are documented separately.

The comprehensive grade is calculated as follows:

- Master's Thesis: 70%
- Defence examination (incl. presentation): 30%

(6) 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 have not completed the formerly effective Master's curriculum in Environment and Bio Resources Management (H 427) when this new Master's curriculum comes into force are transferred to the currently valid one.

For students in the new Master's curriculum already positively completed exams on courses from the old Master's curriculum are acknowledged based on the equivalence list for the respective study programme.

§12 EFFECTIVE DATE

This curriculum shall take effect on Oct. 1st 2025.

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.

Lab Course (UE)

Lab 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's 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/Seminar (VS)

Lecture/Lab (VU)

Lecture/Field Trip (VX)

Seminar/Field Trip (SX)

Lab/Seminar (US)

Lab/Field Trip (UX)