



Universität für Bodenkultur Wien

University of Natural Resources and Life Sciences, Vienna

## Curriculum

for the Master Programme in

## Civil Engineering and Water Management

Programme Classification No. 066 431

Effective Date: Oct. 1<sup>st</sup>, 2024



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.

# CONTENTS

§ 1 Qualification Profile.....	3
§ 2 Admission Requirements.....	4
§ 3 Programme Structure .....	5
§ 4 Compulsory Courses.....	6
§ 5 Elective Courses .....	7
§ 6 Free Electives .....	13
§ 7 Compulsory Internship .....	13
§ 8 Master's Thesis .....	13
§ 9 Completion of the Master Programme .....	13
§ 10 Academic Degree.....	14
§ 11 Examination Regulations .....	14
§ 12 Transitional Provisions.....	15
§ 13 Effective Date.....	15
Annex A Types of Courses.....	16

## Contact

Center for International Relations  
University of Natural Resources and Life Sciences, Vienna  
Peter Jordan Str. 82a, 1190 Vienna  
Austria, Europe  
Phone: (+43-1)-47654-2600  
Fax: (+43-1)-47654-2606  
e-mail: [international@boku.ac.at](mailto:international@boku.ac.at)  
<http://www.boku.ac.at/international.html>

*Published and printed with support of ERASMUS–OM-funds*

*Issued in October, 2024*

**Curriculum of the Master Degree Programme**  
**“Civil Engineering and Water Management”**  
At the University of Natural Resources and Life Sciences, Vienna

*As at October 1<sup>st</sup>, 2024*

## **§ 1 QUALIFICATION PROFILE**

The Master degree programme in Civil Engineering and Water 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**

The Master degree programme in Civil Engineering and Water Management allows students to consolidate their knowledge of the areas and working practices within the applied sciences and their engineering-related applications. This degree programme aims to enable mankind's use of natural resources.

Graduates of the Master degree programme are equipped with a good basic scientific knowledge, in addition to a comprehensive understanding of the sustainable use of resources and a logical mind for responsible planning, design, construction and maintenance.

In the areas of water and soil, the following subjects will be researched and extensively taught: hydrology, water management planning, constructive hydraulic engineering and river management, cultural water and groundwater management, settlement water management, industrial water management and water protection, hydrobiology and water ecology, waste management.

The subject area of constructional engineering includes the fields structural analysis, geotechnology, resource-orientated building methods, constructive engineering as well as construction economics and project management.

In the fields of land use planning, traffic engineering and geo-data management graduates are equipped with specialised knowledge for the documentation and sustainable development of land use and infrastructure as well as for solutions of traffic and mobility problems.

Graduates of the Master degree in Civil Engineering and Water Management possess the necessary knowledge of administration and management to be successful in their work. They are skilled in communication-, coordination and leading skills and they are aware of the importance of mobility, language skills and internationality for successful professional occupations.

### **1b) Professional Qualifications**

Graduates of the Master degree programme of Civil Engineering and Water Management are especially enabled to work in the following fields of activities:

- Water management
- Land management, structural engineering and construction economics
- Traffic and infrastructure planning
- Waste management
- Geoinformation
- Risk management

For graduates of the Master degree programme of Civil Engineering and Water Management, employment opportunities are offered especially in the following fields of activities with the respective requirements:

- Public sector, e. g. federal ministries, governments and district administration or institutions for infrastructure
- Tertiary sector, e.g. engineering and construction offices, consulting, planning and managing of projects
- Freelance: for example as freelance engineer and consultant engineer, authorized expert or in the field of project realization
- Research and development, e.g. at universities and public research and development centres

## **§ 2 ADMISSION REQUIREMENTS**

Graduates of the Bachelor programme in Civil Engineering and Water Management offered by BOKU University of Natural Resources and Life Sciences are eligible for admission with no further requirements.

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

(1) Basic knowledge in Civil Engineering and Water Management:

Mathematics, statistics, physics, chemistry, geology, meteorology, pedology, botany, hydrobiology, technical geometry, mechanics, material science, statics and strength of materials, hydraulics, surveying, geoinformation, spatial planning and construction economics

(2) Knowledge in the core areas of Civil Engineering and Water Management:

Hydrology, water management, constructive hydraulic engineering, settlement water management, waste management, rural water management, construction engineering, geotechnics, transport, rural development

Graduates who have completed 40 ECTS credits in both of the two areas are admitted directly to the Master degree programme.

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, 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

Compulsory courses:	29 ECTS credits, including
Master's seminar:	2 ECTS credits
Master's Thesis:	30 ECTS credits
Elective courses:	48 ECTS credits
Free electives:	13 ECTS credits
Foreign language-taught courses*):	10 ECTS credits

\*) Re foreign language-taught courses

Students are required to complete courses, which are related to the field of study, worth a total of 10 ECTS credits taught in a foreign language. These courses can be compulsory courses, elective courses, internships or free electives. Courses taken at international universities abroad are to be credited. General language courses (with the exception of specialised language courses) will not be considered. (General foreign language courses may be credited in the framework of free elective courses.)

### **3b) 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.

### **3c) 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)
- \*) Compulsory courses of the elective module

The following compulsory courses (worth 27 ECTS credits in total) are required to complete the Master programme:

Course Number	Course Title	Semester	Course Type	ECTS Credits
875326	Construction and plane load-bearing structures	SS	VU	4.0
873311	Applied geotechnical engineering	WS	VU	4.0
819302	Hydromechanics	WS	VU	4.0
736306	Special administrative law for civil engineering	SS	VS	4.0
856301	Strategic planning, decision support, and mediation	WS	VS	3.0
871312	Natural hazards	SS	VO	2.0
810300 850300 870300	Construction project (optionally interdisciplinary)	WS or SS	PJ	6.0
	Master's thesis seminar		SE	2.0

## § 5 ELECTIVE COURSES

Elective courses worth a total of 48 ECTS credits are required to complete the Master programme. **Students have to choose 4-6 out of 13 elective modules. In each chosen elective module, courses worth 8 ECTS in total have to be taken.** If only 4-5 modules were chosen, the remaining ECTS credits (8 and 16, respectively) have to be gained by taking courses freely among all **chosen** elective modules.

Transport Planning and Transport Infrastructure		Semester	Course Type	ECTS Credits
Course Number	Course Title			
856319	Traffic planning *)	SS	VU	3.0
856303	Road design (exercises) *)	WS	PJ	3.0
856306	Traffic and transport planning <sup>1</sup>	SS	SE	3.0
856308	Public transport	SS	SE	2.0
856312	Road safety	SS	VO	2.0
856304	Development of a transport master plan for a town	WS	SE	4.0
856305	Mobility surveys and data analyses	SS	VU	3.0
856307	Traffic forecast and traffic models	SS	VU	3.0
856309	Railway system and railway construction I	WS	VO	2.0
856317	Railway system and railway construction II	SS	VU	2.0
856311	Road construction technology	SS	VO	2.0
856320	Road planning and environmental protection	WS	VU	4.0
856365	Road operation and maintenance	WS	VO	2.0
856315	Minor rural roads	SS	VO	2.0
856376	Transport telematics	WS	SE	2.0
856318	Transport planning and policy	WS	VO	1.0

Geo-Data Management		Semester	Course Type	ECTS Credits
Course Number	Course Title			
857300	Geo-data management <sup>1</sup> *)	WS	VU	3.0
857303	Satellite-based positioning and navigation (GPS) *)	WS	VU	3.0
857304	Remote sensing and image processing <sup>1</sup>	SS	VU	6.0
857305	Computers in surveying	WS	VU	3.0
857306	Applied photogrammetry	WS	VU	4.5
857307	Spatial modeling and simulation <sup>5</sup>	WS	VU	3.0
857308	Geodata for GIS-application in Austria	SS	VU	3.0
857309	Web-GIS-technologies <sup>2</sup>	SS	VU	3.0
857310	Mathematical methods in geoinformatics <sup>5</sup>	WS	VU	1.5

857311	Legal bases of the acquisition and management of geo-data <sup>3</sup>	WS	VO	1.0
816347	Application of GIS in hydrology and water management <sup>1,3</sup>	SS	VO	3.0

Land Management and Rural Development		Semester	Course Type	ECTS Credits
Course Number	Course Title			
855322	Land consolidation project *)	SS	PJ	3.0
857315	Land administration *)	WS	VO	2.0
855302	Spatial planning: legal and planning instruments	WS	VO	2.0
855328	Land policy and land rearrangement	WS	VO	2.0
855323	Spatial planning in alpine areas	SS	VO	2.0
855303	Spatial impact assessment	SS	VS	3.0
857316	International land management <sup>1</sup>	WS	VS	1.5
855326	Spatial research in rural areas	SS	VO	2.0
855331	Sustainable spatial development and energy transition <sup>1</sup>	WS	VS	6.0
855308	Politics of spatial and regional planning	WS	VO	3.0
855321	Integrated spatial and energy planning	SS	VS	3.0
934307	Transformative development <sup>1</sup>	WS	VS	3.0

Risk Management and Protection of Resources		Semester	Course Type	ECTS Credits
Course Number	Course Title			
819336	Integrated flood risk management <sup>1</sup> *)	WS	VO	3.0
872303	Sustainability, protection of resources and natural hazards *)	WS	VU	3.0
871314	Protection and mitigation measures against natural hazards <sup>1</sup>	SS	VX	3.0
871360	Risk management and vulnerability assessment <sup>1</sup>	WS	VS	3.0
872301	Landslide hazards <sup>2</sup>	WS	VS	3.0
818301	Environmental risks - introduction to risk analysis	WS	VO	2.0
818304	Technology assessment	SS	VS	3.0
851311	Environmental statistics <sup>1</sup>	SS	VU	3.0
911301	Soil protection <sup>1</sup>	SS	VO	3.0

Hydrology and Water Management		Semester	Course Type	ECTS Credits
Course Number	Course Title			
816352	Hydrological processes and water resources management *) <sup>1</sup>	SS	VO	3.0
816353	Practical course in hydrology and water management II *)	SS	UE	1.5
816303	Seminar in groundwater management <sup>1,3</sup>	WS	SE	3.0



816342	Possible impacts of climate change on water resources <sup>1</sup>	SS	VO	3.0
816305	Seminar in surface hydrology	SS	SE	3.0
816307	Hydro-electric energy and electricity market	WS	VO	2.0
819308	Solution of conflicts between ecological integrity and engineering of rivers	WS	VO	2.0
872330	Hydrogeology <sup>1</sup>	WS	VU	3.0
872331	Hydrogeological excursion <sup>1</sup>	SS	EX	1.0
816351	Hydrometric and river engineering field exercises <sup>3</sup>	SS	PR	4.5

Hydraulic Engineering and River Basin Management		Semester	Course Type	ECTS Credits
Course Number	Course Title			
819326	Hydraulic engineering and river basin management <sup>1</sup> *)	WS	VO	3.0
819320	Planning and design of hydraulic structures (river engineering & small hydro power) *)	SS	UE	3.0
819312	Project management for hydraulic engineering	SS	VO	2.0
816313	Environmental impact assessment for small hydropower plants <sup>3</sup>	WS	VO	1.0
819314	Planning and design of small hydro power plants	WS	VO	2.0
819315	Hydraulic scale models	SS	VU	3.0
816316	River maintenance and design <sup>3</sup>	SS	VO	2.0
819317	Sediment regime and river morphology	SS	VO	3.0
819318	Monitoring in river engineering	SS	VO	3.0
819319	River basin planning and management	WS	VO	2.0
819332	Computer based river modelling <sup>1</sup>	WS	VU	3.0

Structural Engineering and Construction Management		Semester	Course Type	ECTS Credits
Course Number	Course Title			
875311	Structural design *)	WS	VU	3.0
875300	Construction economy and construction management *)	WS	VO	3.0
876333	Digital design and automated construction <sup>1,3</sup>	SS	PJ	6.0
875313	Protection systems against natural hazards <sup>3</sup>	SS	VO	2.0
875320	Anchor and fastening techniques <sup>3</sup>	SS	VO	2.0
876338	Timber construction	SS	VO	2.0
876349	Timber construction	SS	UE	3.0
875301	Construction- executing and process planning <sup>3</sup>	SS	VO	2.0
875341	Structural design and infrastructure construction	WS	PJ	3.0
875350	Law for engineers <sup>1</sup>	WS	VO	2.0
875306	Project and risk management, infrastructure in construction	WS	VO	2.0

875307	Project and risk management, infrastructure in construction	WS	UE	3.0
--------	---	----	----	-----

Structural Analysis and Life Cycle Management		Semester	Course Type	ECTS Credits
Course Number	Course Title			
876332	Sustainable design and construction*) <sup>1</sup>	WS	VO	3.0
875335	Safety and reliability of structures*) <sup>1</sup>	SS	VU	3.0
876337	Sustainable design and construction <sup>1</sup>	WS	PJ	3.0
875340	Experimental testing on building materials and fastening technology	SS	VU	6.0
876338	Timber construction		VO	2.0
876349	Timber construction	SS	UE	3.0
892306	Building physics <sup>1</sup>	WS	VO	3.0
892313	Building physics <sup>1</sup>	WS	UE	3.0
875314	Structural maintenance	SS	VU	4.0
875317	Structural analysis - FEM <sup>1,3*</sup> )	SS	VO	2.0
875318	Structural analysis - FEM <sup>1,3*</sup> )	SS	UE	2.0
875336	Reliability and safety evaluation – Probabilistic methods for existing structures <sup>1</sup>	SS	VU	4.0

Aquatic Ecology		Semester	Course Type	ECTS Credits
Course Number	Course Title			
812320	Hydrobiology II *)	SS	VO	1.5
812384	Aquatic biomonitoring and -assessment <sup>1 *</sup> )	WS	VO	2.0
812347	Human impacts in riverine landscapes <sup>1 *</sup> )	WS	VO	2.0
812358	Benthic invertebrate status assessment <sup>1</sup>	SS	VU	3.0
812357	Benthic invertebrate sampling and monitoring <sup>1</sup>	SS	VU	3.0
812329	Selected chapters in ecology of aquatic environments	WS	VO	3.0
812350	Applications in river landscape management an conservation <sup>1</sup>	WS or SS	VX	3.0
812349	Ecological river landscape management <sup>1</sup>	WS	VO	2.0
831301	Ecology of aquatic plants <sup>1</sup>	SS	VU	2.0
812344	Ecology of fishes <sup>1</sup>	WS	VO	3.0
812354	Ecohydromorphological mapping <sup>1</sup>	WS	VU	2.0
812372	Fish passes and continuity <sup>1</sup>	SS	VU	2.0
812381	Aquatic habitat modeling <sup>1</sup>	SS	VU	2.0

<b>Sanitary Engineering, Industrial Water Use and Pollution Control</b>		<b>Semester</b>	<b>Course Type</b>	<b>ECTS Credits</b>
<b>Course Number</b>	<b>Course Title</b>			
811311	Project work on sanitary engineering and water pollution control *)	SS	PJ	6.0
811300	Technologies in sanitary engineering	WS	VU	3.0
811301	Technologies in water pollution control	WS	VU	3.0
811307	Seminar of practice in sanitary engineering, industrial water management and water pollution control	SS	VS	4.5
811360	Modelling in sanitary engineering (sewer, treatment plant and receiver) <sup>1</sup>	WS	VU	4.5
811312	Water quality assessment	SS	VU	4.5
811303	Strategic planning and operational optimisation in sanitary engineering <sup>3</sup>	SS	VU	4.5
811317	Construction and rehabilitation of pipes, sewer operation and maintenance	WS	VO	2.0
811315	Water quality monitoring, sensor and control technology <sup>5</sup>	WS	VO	2.0
811363	Industrial water management <sup>1</sup>	SS	VO	3.0
811335	Water quality management for municipal and industrial water use <sup>3</sup>	WS	VO	2.0
811362	On site solutions for water supply and sanitation <sup>1</sup>	WS	VO	3.0
811332	Water resources management in developing cooperation <sup>1</sup>	SS	VU	3.0

<b>Soil Physics and Rural Water Management</b>		<b>Semester</b>	<b>Course Type</b>	<b>ECTS Credits</b>
<b>Course Number</b>	<b>Course Title</b>			
815321	Soil conservation <sup>1</sup>	WS	VU	3.0
815303	Drainage	WS	VU	3.0
815311	Simulation in vadose zone environment <sup>1</sup>	WS	VU	3.0
815304	Irrigation	SS	VU	3.0
815329	Selected methods of soil analysis <sup>2</sup>	SS	PR	4.0
815316	Soil physics continued	SS	VU	3.0
815345	Soil erosion models and their application <sup>1</sup>	WS	VU	3.0
815326	Applied methods of rural water management in the tropics and subtropics	SS	SE	3.0
815314	Development and application for water erosion models <sup>1,3</sup>	WS	VO	2.0
815323	Soil water and groundwater protection <sup>3</sup>	WS	VO	2.0
815324	Crop water requirements <sup>3</sup>	WS	VO	2.0
815328	Isotope and tracer hydrology <sup>1</sup>	SS	VU	3.0

<b>Geotechnical Engineering and Applied Geology</b>		<b>Semester</b>	<b>Course Type</b>	<b>ECTS Credits</b>
<b>Course Number</b>	<b>Course Title</b>			
873300	Geotechnical engineering I *)	SS	VU	3.0
872309	Engineering geology - introduction *)	WS	VU	2.0
873301	Geotechnical engineering II	WS	UE	3.0
873302	Slope engineering <sup>1</sup>	SS	VO	2.0
873312	Special ground construction I	WS	VO	1.0
873313	Special ground construction II	SS	VO	1.0
873305	Numerical methods in geotechnics and applied geology <sup>1</sup>	WS	VU	3.0
873308	Geotechnical engineering in waste management	SS	VO	2.0
873309	Laboratory practices in geotechnical engineering	SS	PR	3.0
872311	Rock mechanics	SS	VU	4.5
872312	Applied geology - field practice	SS	PR	3.0
872313	Engineering-geological mapping	SS	UE	3.0
872314	Applied geophysics for engineers <sup>1</sup>	WS	VU	3.0
872315	Laboratory exercises	WS	VU	3.0
872317	Environmental geology	SS	VU	3.0
872319	Quaternary geology	WS	VO	2.0
815317	Groundwater prospecting, drilling technology and well completion <sup>3</sup>	SS	VU	3.0
872321	Geological maps and cross sections	WS	VU	3

<b>Waste Management and Waste Disposal</b>		<b>Semester</b>	<b>Course Type</b>	<b>ECTS Credits</b>
<b>Course Number</b>	<b>Course Title</b>			
813336	Seminar waste management *)	WS	SE	4.5
813337	Waste logistics	WS	VO	2.0
813339	Waste technology	SS	VO	3.0
813303	Planning and assessment of waste management systems <sup>1</sup>	SS	VU	3.0
813394	Chemistry and analysis of waste	SS	VO	2.0
813304	Life cycle management <sup>1</sup>	SS	VO	2.0
813301	Global waste management II <sup>1</sup>	SS	VO	3.0
813344	Monitoring of emissions from biological waste treatment processes	SS	VU	3.0
813308	Research reports of waste management	WS or SS	VS	1.0
911339	Contaminated sites and soil protection	WS	VO	2.0

The chosen elective subjects and their ECTS credit points are listed in the Master's Thesis certificate.

## **§ 6 FREE ELECTIVES**

Free electives worth a total of 13 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 to choose free elective courses from the elective subjects (§ 5).

## **§ 7 COMPULSORY INTERNSHIP**

In the course of the Master degree programme Civil Engineering and Water Management no compulsory internship has to be completed. It is recommended to complete a voluntary internship to improve the skills acquired in the degree programme.

## **§ 8 MASTER'S THESIS**

The Master's Thesis is a paper on a scientific topic, to be written as part of the Master degree programme Civil Engineering and Water Management (for exceptions please see the By Laws 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 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.

## **§ 9 COMPLETION OF THE MASTER PROGRAMME**

The Master programme in Civil Engineering and Water 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.

## § 10 ACADEMIC DEGREE

Graduates of the Master programme in Civil Engineering and Water Management are awarded the academic title Diplom-Ingenieur (m) or Diplom-Ingenieurin (f), abbreviated as Dipl.-Ing./ Dipl.-Ing.<sup>in</sup> or DI/DI<sup>in</sup>.

The academic title Dipl.-Ing./Dipl.-Ing.<sup>in</sup> or DI/DI<sup>in</sup>, if used, shall precede the bearer's name (§ 88 [2] UG 2002 BGBl. I no. 81/2009).

## § 11 EXAMINATION REGULATIONS

(1) The Master programme in Civil Engineering and Water Management has been completed successfully when the following requirements (corresponds to components in [7] below) have been met:

- positive completion of compulsory courses worth a total of 29 ECTS credits (§ 4),
- positive completion of elective courses worth a total of 48 ECTS credits (§ 5),
- positive completion of free electives worth a total of 13 ECTS credits (§ 6),
- a positive grade on the Master's Thesis, the Master's Thesis seminar 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 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 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 publically presented by the student and defended in the form of an academic discussion (defence examination) after successful completion of all courses. The 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).

## **§ 12 TRANSITIONAL PROVISIONS**

The compulsory course „Construction – Surface Structures”, “Applied Geotechnical Engineering” and “Natural Hazards” were adopted from the curriculum for the Bachelor study programme Land and Water Management which was in effect until September 30, 2011 into this present curriculum for the Master study programme Land and Water Management. If the courses “Construction”, “Geotechnical Engineering II” and “Natural Hazards” were already completed successfully in the Bachelor study programme, they are creditable with regards to content for the courses “Construction – Surface Structures”, “Applied Geotechnical Engineering” and for “Natural Hazards”. However, optional lecture courses from the optional lecture course pool have to be completed successfully to an extent of 10 ECTS credits all together (4 ECTS credits for “Construction – Surface Structures”, 4 ECTS credits for “Applied Geotechnical Engineering”, 2 ECTS credits for “Natural Hazards”).

If “Geotechnical Engineering II” and / or “Natural Hazards” were submitted as free optional lecture courses in the Bachelor study programme Land and Water Management, this crediting with regards to content is still possible. However, optional lecture courses from the optional lecture course pool have to be completed successfully to an extent of 4 ECTS credits for “Applied Geotechnical Engineering” or 2 ECTS credits for “Natural Hazards” respectively.

Students who have not completed the formerly effective Master’s degree in Civil Engineering and Water Management (UH 066 431) 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.

The compulsory completion of foreign language courses applies for students who began their studies under the new curriculum on October 1st, 2011, or after.

## **§ 13 EFFECTIVE DATE**

This curriculum shall take effect on Oct. 1<sup>st</sup> 2024.

## **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's 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)**