



Universität für Bodenkultur Wien

University of Natural Resources and Life Sciences, Vienna

Curriculum

for the Master's Programme

Joint degree - Sustainability in Agriculture, Food Production and Food Technology in the Danube Region

Programme classification no. 066 501

Effective date October 1, 2024



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Preamble

The programme portfolio covers all relevant disciplines of science, engineering, economics and social sciences, offering extensive opportunities for interdisciplinary approaches. Based on this comprehensive, scientific expertise, an **international joint master's programme** is offered with the master's programme, which tries to make the potential of interdisciplinarity and the cooperation of leading academic institutions in the Danube area for young scientists fruitful.

Sustainable development, food security, technology and quality, sustainable food production, biotechnology and sustainable energy are the core content of the master's programme. With the international joint master's programme thus a unique and competent response to issues such as climate change and protection and promotion of livelihoods is offered in and for the Danube region.

The international joint master's programme in Sustainability in Agriculture, Food production and Food technology (in short: Danube AgriFood Master, acronym "DAFM") is embedded in the CASEE Network (the ICA Regional Network for Central and South Eastern Europe) and is implemented as a joint degree offered by 7 partner universities.

- University of Natural Resources and Life Sciences, Vienna (BOKU) (AT)
- Hungarian University of Agriculture and Life Sciences (MATE) (HU)
- Czech University of Life Sciences Prague (CZU) (CZ)
- University of Zagreb (UNIZG) (HR)
- University of Novi Sad (UNS) (SR)
- Slovak University of Agriculture (SUA) (SK) and
- University of Life Sciences "King Michael I" from Timisoara (ULST) (RO)

Graduates receive a joint master's degree in Sustainability in Agriculture, Food production and Food technology from the universities they attended during their studies.

The 4-semester joint master's programme is offered in English and can be started at either CZU (CZ) or MATE (HU) in the first year; the second study year has to be spent at another partner university according to the student's chosen study specialization (see mobility track). Specialization 1 focuses on Sustainability in Food Production and Food Technology; specialization 2 on Sustainability in Agriculture. Students choose their specialization and mobility track at the time of the application. Both specializations offer basic courses from the respective other specialization to ensure the joint approach of this master programme. The master's thesis has to be concluded during the 4th semester. It is supervised by the student's chosen 2nd year university and co-supervised by the 1st year university. Students have to study at two different universities. In addition, students have to complete the joint online start-up module offered by all universities before semester 1, one summer/winter school (either before semesters 2, 3 or 4) and an internship.

§ 1 QUALIFICATION PROFILE

The master's programme in Sustainability in Agriculture, Food production and Food technology 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 have a deep knowledge of agriculture and food production under the aspect of sustainability in the Danube Region.
- Graduates are able to network and exchange the most actual knowledge of agricultural, food production and food technology under the aspect of sustainability.
- They understand the relevance of the principle of sustainability generally and especially for the Danube Region.
- They understand the development of the Danube Region from the point of view of ecology, rural development and cultural history.
- The graduates have the capability to critically select and apply adequate methods for sustainability in agriculture, food production and food technology
- The graduates are able to analyse social interactions in an intercultural context. They are aware of intercultural differences and misunderstandings that might result from these. The graduates have reached an open-mindedness towards persons with other nationality. Due to the intercultural competence achieved, the graduate is able to be solely responsible for guiding international project teams.
- The graduates are fluent in English.
- Graduates convey research proposals, reports and scientific papers to a wider public audience.

1b) Professional qualifications

The graduates have interdisciplinary knowledge, competencies and skills in agricultural and/or food science with a major focus on sustainability and sustainable technologies. A further focus of the qualification is intercultural learning, which allows graduates a deeper understanding of the cultural and social development of and in the Danube Region.

§ 2 ADMISSION REQUIREMENTS

Previous studies accepted from all parties without further prescription of ECTS credits:

- BOKU - BSc Agricultural Sciences
- BOKU - BSc Food Science and Biotechnology
- BOKU - BSc Environment and Bio-Resources Management
- BOKU - BSc Landscape Architecture and Landscape Planning
- BOKU - BSc Forestry
- BOKU – BSc Wood & Fibre Technology
- BOKU – BSc Environmental Sciences and Civil Engineering
- MATE - BSc in Agriculture

- MATE - BSc in Agricultural Engineering
- MATE - BSc in Agricultural Sciences
- MATE - BSc in Wildlife Conservation and Management
- MATE - BSc in Food Engineering
- MATE - BSc Bioengineering
- MATE - BSc in Chemical engineering
- MATE - Agricultural Sciences (with 20 ECTS conditional admission)
- UNIZG - BSc Agricultural Economics
- UNIZG - BSc Agricultural Engineering
- UNIZG - BSc Agroecology
- UNIZG - BSc Animal Sciences
- UNIZG - BSc Horticulture
- UNIZG - BSc Organic Agriculture
- UNIZG - BSc Plant Protection
- UNIZG - BSc Plant Sciences
- UNIZG - BSc Mediterranean Agriculture
- UNIZG - BSc Food technology
- UNIZG - BSc Forestry
- UNIZG - BSc Urban Forestry, Nature Conservation and Environmental Protection
- UNS - BSc in Agriculture
- UNS - BSc Crop Science
- UNS - BSc Animal Science
- UNS - BSc Fruit Science and Viticulture
- UNS - BSc Phytomedicine
- UNS - BSc Agricultural Engineering
- UNS - BSc Water Management
- UNS - BSc Agricultural Economics
- UNS - BSc Landscape Architecture
- UNS - BSc Horticulture
- UNS - BSc Agrotourism and Rural Development
- UNS - BSc Agricultural Ecology and Environmental Protection
- UNS - BSc Organic Agriculture
- UNS - BSc Agroindustrial Engineering
- ULST - BSc Agriculture
- ULST - BSc Plant Protection
- ULST - BSc Biology

- ULST - BSc Environmental Protection in Agriculture
- ULST - BSc Cadaster
- ULST - BSc Equipments for the Food Industry
- ULST - BSc Horticulture
- ULST - BSc Genetics
- ULST - BSc Landscape Architecture
- ULST - BSc Forestry
- ULST - BSc Management of Agri-business
- ULST - BSc Management in Agro-tourism
- ULST - BSc Management in Tourism
- ULST - BSc Veterinary Medicine
- ULST - BSc Food Engineering
- ULST - BSc Food Control
- ULST - BSc Consumer Protection
- ULST - BSc Animal Science
- ULST - BSc Agricultural Biotechnologies
- CZU - BSc Agriculture and Food
- CZU - BSc Sustainable use of Natural Resources
- SUA - BSc Food quality and control
- SUA - BSc Agro food sciences
- SUA - BSc Applied biology
- SUA - BSc Agro biotechnology

For graduates of bachelor's programmes which are not listed above, mastery of the following learning outcomes (evidenced by ECTS credits) is required for admission:

At least 60 ECTS credits from the following areas (ECTS credits per area are minimum requirements, the total number has to equal 60 or more):

- Natural science: min. 20 ECTS credits
- Plant production: min. 10 ECTS credits
- Animal science: min. 10 ECTS credits
- Economic sciences: min. 10 ECTS credits
- Technological sciences: min. 8 ECTS credits

Admission criteria also comprise English language skills at level B2/C1 of the Common European Framework of References for Languages (CEFR). Equivalent proofs are the following:

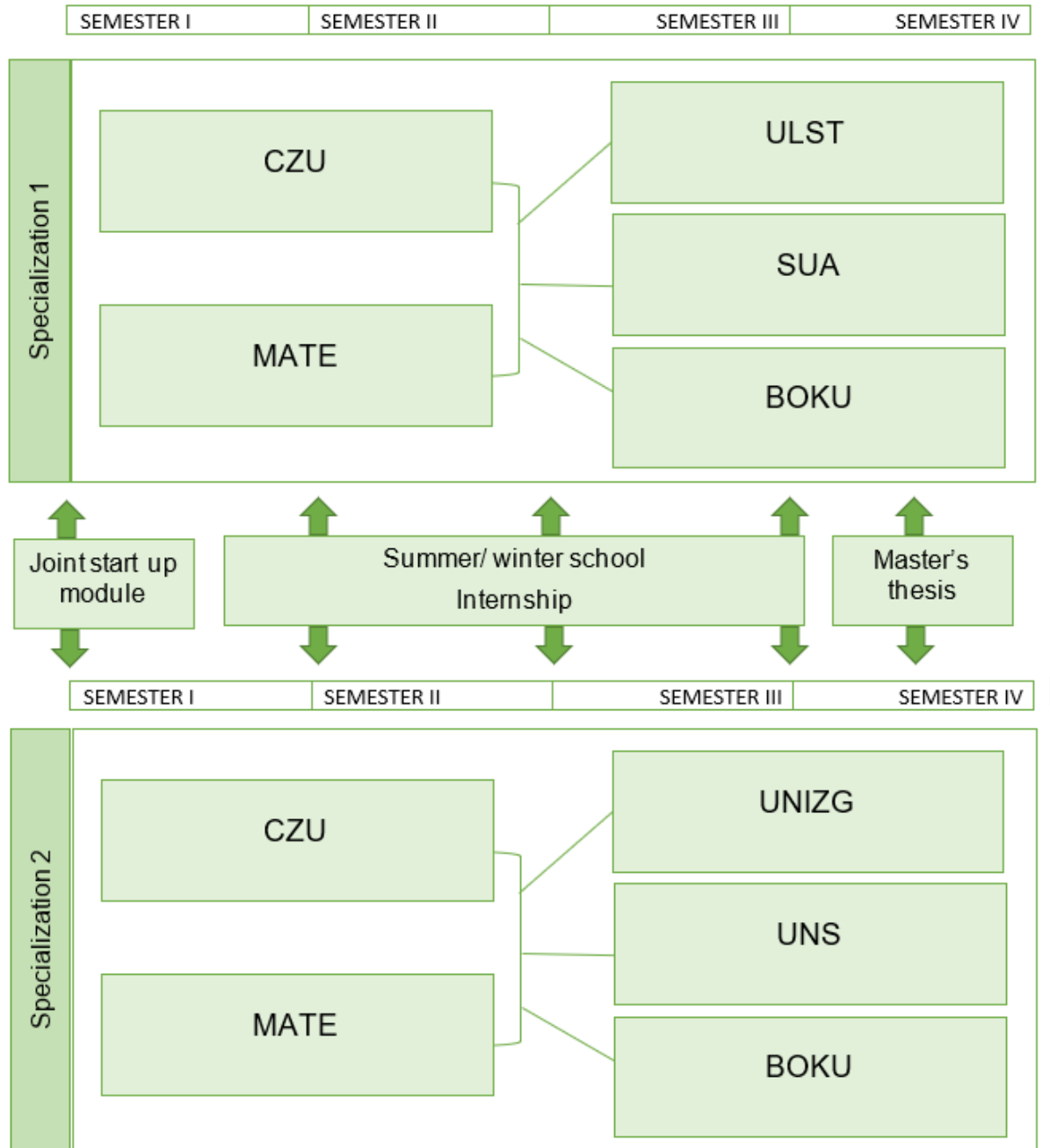
- Cambridge Certificate of Advanced English
- IELTS Academic results 6.0 or better

- TOEFL (paper based 577 or computer-based 233 or 90-91 internet based, TOEFL Home Edition 95-100)
- TOEIC (at least 785 points)
- Completion of a study programme that was entirely taught in English from countries with English as the official language
- Successfully passed school-leaving examination (general university entrance qualification) in English from a recognized domestic or foreign educational institution, provided that the country of issue's educational regulations offer level B2. If the school leaving certificate does not confirm level B2 of the European frame of reference, a confirmation from the appropriate ministry must be submitted.

Admission is granted to prospective students who meet the admission criteria, which are stated in the education and examination regulations. The Joint Management Committee will select candidates for admission; and admission at one of the parties is automatically accepted at all other parties. Students in the programme will be registered at each of the parties.

§ 3 PROGRAMME STRUCTURE

MOBILITY TRACK



Each student has to study at two different universities according to the chosen specialization and mobility track. A minimum of 30 ECTS credits has to be completed per semester. The 4th semester is dedicated to completing the master's thesis, which is supervised by the students 2nd year university and co-supervised by the 1st year university.

In detail, this means that the students have to complete the following schedule:

- a) Specialization 1: Sustainability in Food Production and Food Technology
 - a. Semester 1 and 2 at MATE or CZU
 - b. Semester 3 and 4 at ULST, SUA or BOKU
- b) Specialization 2: Sustainability in Agriculture

- a. Semester 1 and 2 at MATE or CZU
- b. Semester 3 and 4 at UNIZG, UNS or BOKU
- c) Both specializations include
 - a. Joint online start up module before semester 1
 - b. Compulsory summer or winter school before semesters 2, 3 or 4
 - c. Compulsory internship before semesters 2, 3 or 4

Each degree-awarding partner has to offer courses of at least 30 ECTS credits per semester for students to choose.

3a) Duration, total ECTS credits, and structure

The master's 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).

Structure of the master's programme

Compulsory courses:	55 ECTS credits
Elective courses:	29 ECTS credits
Free electives:	6 ECTS credits
Master's thesis:	30 ECTS credits

The academic programme of the university course consists of focus areas with modules, offered in the form of several courses with different characters (different to the partner universities) - in lectures, lecture and tutorial, seminar or project (in total 90 ECTS). The modules are offered at the different partner universities and their comparability is assured based on the learning outcomes. Each module must be clearly defined in the agreement with the partner universities, that it can be recognised at all partner universities.

The master's thesis is 30 ECTS credits and is supervised both by a competent professional person at one of the degree-awarding universities and a second competent professional person at another degree-awarding university according to the chosen mobility track of each student.

3b) Three-pillar principle

The three-pillar principle is the central identifying characteristics of both the bachelor's and master's programmes offered at the University of Natural Resources and Life Sciences, Vienna. In the master's 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.

§ 4 COMPULSORY COURSES

The following compulsory courses worth a total of 18 ECTS credits at BOKU are required to complete the master's programme:

Focus Area "Food Safety and Consumer Science"	Course type	ECTS credits
course title		
Food safety and risk management	VS	3
Focus Area "Sustainable Agriculture"	Course type	ECTS credits
course title		
Organic horticulture (vegetables and ornamentals)	VX	3
Focus Area "Soil, Water and Climate"	Course type	ECTS credits
course title		
Soils and global change	SE	4
Focus Area "Intercultural Learning"	Course type	ECTS credits
course title		
Intercultural communication	VU	3
Internship	SE	3
Master's thesis seminar	SE	2

In addition, students have to complete 37 ECTS compulsory courses (including the joint start-up module, summer/winter school) at either CZU or MATE (depending on the chosen mobility track).

§ 5 ELECTIVE COURSES

Elective courses worth a total of 8 ECTS credits at BOKU are required to complete the master's programme. Courses can be chosen from any of the focus areas according to the interest of the students.

Focus Area "Food Safety and Consumer Science" BOKU	Course type	ECTS credits
course title		
Food microbiology for SIFC	VO	4
Food chemistry for SIFC	VO	4
Practical training in food microbiology for SIFC	UE	3
Practical course in food processing	UE	5

Human nutrition	VO	3
Food chemistry practical course for SIFC	UE	3
Molecular biology for food analysis	VU	3
Food authenticity practical course	UE	3
Validation of cleaning processes and hygienic design	VO	3
National and international food safety authorities	SE	3
Biochemical and biotechnological methods (analytics design)	VU	3
Quality management in biotechnology	VU	3
Safety aspects of plant biotechnology	VO	3
Genetically modified organisms in the environment	SE	2
Determination of provenance and authenticity of food and food products by modern analytical methods (in Eng.)	VS	3

Focus Area "Sustainable Agriculture" BOKU	Course type	ECTS credits
course title		
Transformative development	VS	3
Global change and pest management	VO	3
Medicinal and aromatic plants	VO	3
Animal production in organic agriculture	VO	4
Plant and environment	VO	3
Production systems and atmospheric pollution	VO	3
European regulatory framework for organic production	VO	3
Local knowledge and ethnobiology in organic farming	SE	6
Molecular phytopathology	VU	4
Multiple criteria decision making in natural resource management	VS	3
Valuation methods for natural resources	VO	3
E-business in the agriculture and food value chain	SE	3
Fish farming and aquaculture	VO	2
Aquaculture in practice – lectures and field trips	VX	2
Ethics in organic agriculture	SE	3
Ecology and population biology of plants in agroecosystems	VX	5
Ecological plant protection	VU	3

Focus Area "Soil, water and climate" BOKU	Course type	ECTS credits
course title		
Soil physics and chemistry	VO	3
Soils and food security	VU	2
Agrometeorology in practice	VU	3
Selected projects in meteorology	UE	3

Soil conservation	VU	3
Soil erosion models and their application	VU	3
Soil fertility and soil ecology in organic agriculture	VU	3
Global waste management I	VO	3
Global waste management II	VO	3
Methods in environmental biotechnology	UE	3
Soils in the landscape	EX	1
Ecological river landscape management	VO	2
On site solution for water supply and sanitation	VO	3
Environmental impacts on riverine ecosystems I	SE	4
Human impacts in riverine landscapes	VO	2
Disaster management	VO	2
Field trip – rural water management	EX	1
Renewable energy resources	VX	3
Practical course in energy engineering	PR	3
Geothermal energy – geological fundamentals and applications	VU	3
Resource efficiency and bioeconomy of bio-based materials	VS	3

Focus Area "Intercultural Learning" BOKU*	Course type	ECTS credits
course title		
Presenting at a scientific conference	SE	3
Intercultural competence – acting effectively in an international environment	VU	3
Interdisciplinary concepts of river-society interactions	VS	3
Security training for studying and field research abroad - raising awareness for critical and emergency situations	VU	2
Globalisation and rural development	VO	3
Rural development	VO	3
Farming resilience and social sustainability	PJ	3
Organisational behaviour and gender issues	VU	3

In addition, students have to complete 21 ECTS elective courses at either CZU or MATE (depending on the chosen mobility track).

§ 6 FREE ELECTIVE COURSES

Free electives worth a total of 6 ECTS credits are required to complete the master's programme in Sustainability in Agriculture, Food production and Food technology. Free electives may be selected from all courses offered by all recognized universities in Austria and abroad. At least 4 ECTS have to be completed at BOKU. 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 cover at least part of the free elective course requirements with courses from the elective modules offered within this curriculum.

§ 7 COMPULSORY INTERNSHIP

A compulsory internship is part of the master's programme. Students should be given the opportunity to complete this internship abroad at any of the partner universities within this master programme or at industry partners. Students are required to document the internship by presenting a confirmation of stay and an internship report. The internship will be recognized by the 1st year university of the student and is worth a total of 3 ECTS.

(1) The compulsory internship is intended to help students improve the skills learned in their degree programme. It is also intended to encourage students to learn to apply what they have learned into practice, and recognize relationships between theory and practice.

(2) The compulsory internship shall be at least 100 working hours in duration. It is recommended to complete the internship between the second and third semesters or the third and fourth semesters of the degree programme. Students may also split the internship into more than one part.

(3) Students have to contact the academic programme coordinator at their 1st year university in a timely manner before the start of the internship. The academic programme coordinator shall consult with the student and advise the student on the choice of internship placement, the necessary procedures and reporting requirements. The approval of the academic coordinator is required.

§ 8 MASTER'S THESIS

Master's theses are academic papers in the Master's studies that serve to demonstrate the ability to work on academic topics independently and in a way that is justifiable in terms of content and methodology (§ 51 para 2 sub-para 8 UG 2002). The study regulations for the Master's thesis can be found in the statutes of the University of Natural Resources and Life Sciences, Vienna. The master's thesis is worth a total of 30 ECTS credits. 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 English. Languages other than English are permissible only if approved and confirmed by the master's thesis supervisor and co-supervisor. The master's thesis defensio must be held in English regardless of the language of the master's thesis.

The master's thesis is 30 ECTS credits and is supervised by a competent professional person at one of the degree-awarding partner universities (2nd year university according to the chosen mobility track). Co-supervision by a second competent professional person at another degree-awarding university (chosen 1st year university) is compulsory.

§ 9 COMPLETION OF THE MASTER'S PROGRAMME

The master's programme in Sustainability in Agriculture, Food production and Food technology has been completed when the student has passed all required courses and received a positive grade on the master's thesis and defensio.

§ 10 ACADEMIC DEGREE

Graduates of the international joint master's programme in Sustainability in Agriculture, Food production and Food technology are awarded the academic degree "Master of Science", abbreviated as "MSc" or "M.Sc." by the universities that the students have physically attended during their studies. These universities have to be chosen out of the following universities:

- University of Natural Resources and Life Sciences, Vienna (BOKU) (AT)
- Hungarian University of Agriculture and Life Sciences (MATE) (HU)
- Czech University of Life Sciences Prague (CZU) (CZ)
- University of Zagreb (UNIZG) (HR)
- University of Novi Sad (UNS) (SR)
- Slovak University of Agriculture (SUA) (SK) and

University of Life Sciences "King Michael I" from Timisoara (ULST) (RO)

The academic degree MSc (M.Sc.) shall follow the bearer's name (§ 88 [2] UG 2002 BGBl. I no. 81/2009).

The degree certificate and supplement thereto shall be issued to individual students by the institution where such students have sat for their MSc thesis examination, which at BOKU is held in form of a defensio, upon successful completion of the master's programme and in accordance with the education and examination regulations. For BOKU, this means successful completion of at least 40 ECTS at BOKU in order to being awarded the BOKU degree.

§ 11 EXAMINATION REGULATIONS

(1) The master's programme in Sustainability in Agriculture, Food production and Food technology in the Danube Region has been completed successfully when the following requirements (corresponding to components in [7] below) are met:

- positive completion of the compulsory courses worth a total of 55 ECTS credits (§ 4);
- positive completion of elective courses worth a total of 29 ECTS credits (§ 5);
- positive completion of free elective courses worth a total of 6 ECTS credits (§ 6); and
- a positive grade on the master's thesis and the defensio.

(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) Student evaluation in modules: Module evaluation is based on the grades given the students in the individual courses that make up the module. The total evaluation for the module is calculated as the average of the grades of all module courses, weighted by ECTS credits. Average values of .5 or lower are rounded to the better (numerically lower) grade; values of over .5 are rounded to the worse (numerically higher) grade. If deemed necessary, the Dean of Students may require a module examination at his/her discretion.

(4) 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.

(5) The topic of the master's thesis shall be selected from one of the subjects of the master's programme.

(6) The completed master's thesis 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, a first examiner (the student's supervisor) and a second examiner. The co-supervisor should be included via video conference or joins in person, if possible. 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%

(7) 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 “good” (2) on all individual components, and if at least 50% of the individual components were graded with 1 (excellent/sehr gut). Students of the international Joint Master’s Programme in Sustainability in Agriculture, Food production and Food technology in the Danube Region need to additionally fulfill the distinction criteria of the universities that they have physically attended during their studies.

§ 12 TRANSITIONAL PROVISIONS

Students who are subject to the master curriculum Sustainability in Agriculture, Food production and Food technology in the Danube Region (Danube AgriFood Master) (H 066 501, version October 1st, 2020) that was in action to date, are entitled to complete their study programme until October 31st, 2025.

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.

§ 13 EFFECTIVE DATE

This curriculum shall take effect on October 1st, 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.

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.

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.

Lecture and seminar (VS)

Lecture and exercise (VU)

Lecture and field trip (VX)

Project course (PJ)

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

Seminar and field trip (SX)

Exercise and seminar (US)

Exercise and field trip (UX)