



Universität für Bodenkultur Wien

University of Natural Resources and Life Sciences, Vienna

Curriculum

for the Master's Programme in

SUSTAINABILITY IN AGRICULTURE, FOOD PRODUCTION AND FOOD TECHNOLOGY IN THE DANUBE REGION

Programme classification no. 066 501

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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 is implemented as a joint degree offered by the University of Natural Resources and Life Sciences, Vienna (Austria) and Szent István University (SZIU), Gödöllő (Hungary) with contributions (courses, MSc thesis supervision, summer schools...) from the following partner universities: Corvinus University Budapest (HU), CULS Prague (CZ), WULS (PL), University of Zagreb (HR), University of Novi Sad (SR), Slovak Agricultural University Nitra (SK) USAMVBT Timisoara (RO). Graduates receive a joint master degree in Sustainability in Agriculture, Food production and Food technology from BOKU and SZIE.

The 4-semester joint master's programme is offered in English and can only be started at BOKU in the first semester; the second semester has to be spent at SZIU and the third semester has to be spent at one of the consortia member universities and the 4th semester has to be spent at either BOKU or SZIU. Students have to study at least at 3 different universities; i.e. at least one semester at BOKU, one semester at SZIU and one semester at a 3rd consortium partner university. In addition, students have to complete two summer schools (before semesters 1 and 3).

§ 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.

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 Danube Region.
- They understand the development of Danube Region from 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. He/She is aware of intercultural differences and misunderstandings that might result out of these. The graduate has achieved 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 graduate is 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:

1. BOKU - BSc Agricultural Sciences
2. BOKU - BSc Food Science and Biotechnology
3. SZIU - BSc in Agriculture

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

At least 60 ECTS from the following areas:

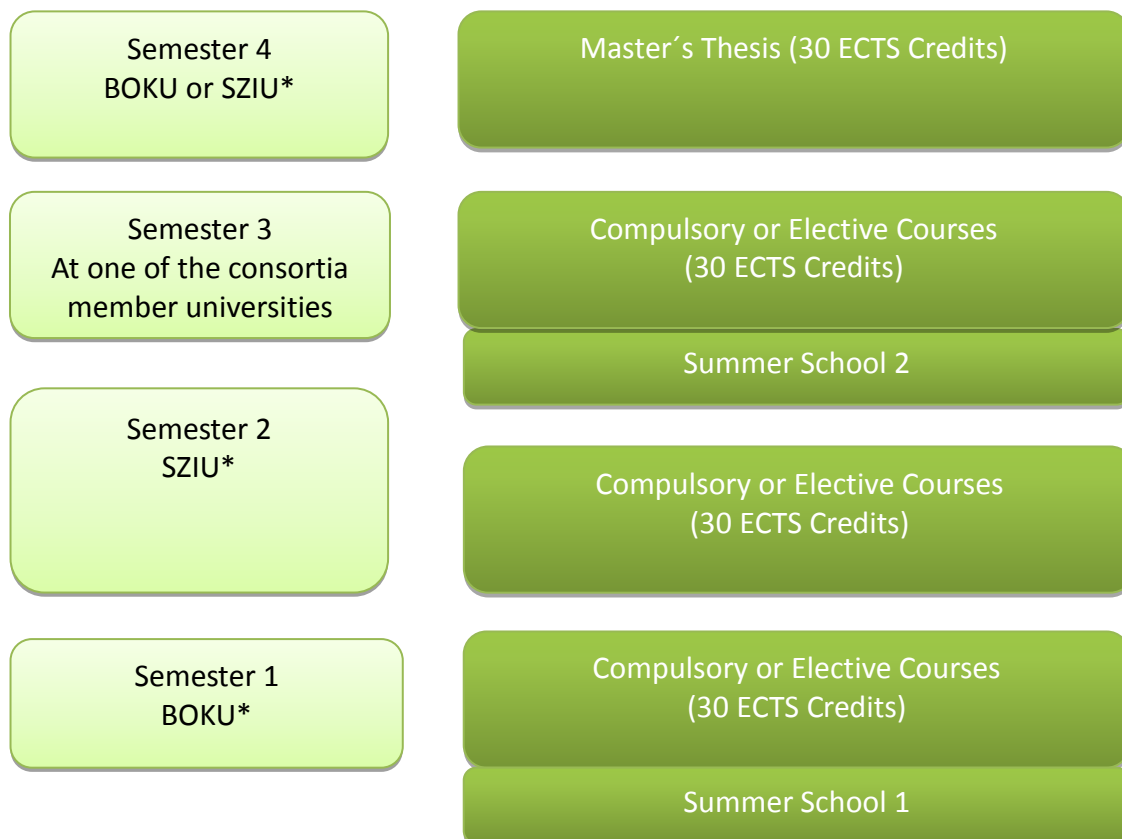
- Natural science: min. 20 ECTS
- Plant production: min. 10 ECTS
- Animal science: min. 10 ECTS
- Economic sciences: min. 10 ECTS
- Technological sciences: min. 8 ECTS

Admission criteria also comprise English language skills at level B2 of the Common European Framework of References for Languages (CEFR). Equivalent tests and their required minimum scores are as following:

- Cambridge Certificate of Advanced English
- IELTS score 6.0 or better
- TOEFL (paper based 577 or computer-based 233 or 90-91 internet based)
- TOEIC (at least 785 points)
- First Certificate in English (FCE)
- Certificate in Advanced English (CAE)
- Certificate of Proficiency in English (CPE)
- Business English Certificate (BEC) Vantage - at least Pass
- Business English Certificate (BEC) Higher
- Certificate in English for International Business and Trade (CEIBT)

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 for the full duration of their studies.

§ 3 PROGRAMME STRUCTURE



Each student has to study at at least 3 different universities; i.e. the student has to spend a minimum of 1 semester (30 ECTS credits) at each of the following institutions: BOKU, SZIU Gödöllő and a third partner within the consortium (i.e. either at CULS Prague, WULS Warsaw, University of Zagreb, University of Novi Sad, USAMVBT Timisoara, SAU Nitra, Corvinus University Budapest).

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

- a) the compulsory Summer School 1
- b) Semester 1 at BOKU*
- c) Semester 2 at SZIU
- d) the compulsory Summer School 2
- e) Semester 3 at one of the following consortia members: CULS Prague, WULS Warsaw, University of Zagreb, University of Novi Sad, USAMVBT Timisoara, SAU Nitra, Corvinus University Budapest.
- f) Semester 4: thesis and graduation at BOKU or SZIU Gödöllő*

*Other consortia member might be added as soon as they start to offer the joint degree

Each consortium 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 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:	50 ECTS credits
Elective courses:	22 ECTS credits
Free electives:	18 ECTS credits
Master's thesis:	30 ECTS credits

The academic programme of the university course consists of focus areas with modules, each comprising 5 or 6 ECTS and 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, 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 recognized at all partner universities.

The master's thesis is 30 ECTS credits and is supervised both by a competent professional person at BOKU or SZIU and a second competent professional person at a cooperating university.

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

Compulsory focus areas that have to be completed by all students are:

- Food Safety and Consumer Science
- Sustainable Agriculture
- Intercultural Learning

Compulsory courses worth a total of 50 ECTS credits are required to complete the master's programme. A minimum of 20 ECTS credits in the focus areas "Food Safety and Consumer Science" and "Sustainable Agriculture" and 10 ECTS credits in the focus area "Intercultural Learning" have to be completed.

Students have to choose the courses marked with an asterisk (*) out of the Focus Areas "Food Safety and Consumer Science", "Sustainable Agriculture" and "Intercultural Learning".

Focus Area "Food Safety and Consumer Science" BOKU	Course type	ECTS credits
course title		
Lebensmittelchemie (für SIFC) (in Eng.) (*)	VO	4
Food Microbiology for SIFC (in Eng.) (*)	VO	4
Food Safety and Risk Management (in Eng.) (*)	VS	3
Cereal technology (in Eng.)	VO	2
Lebensmittelmikrobiologie Übungen für SIFC (in Eng.)	UE	3
Practical Course in Food Processing (in Eng.)	UE	5
Applied Quality Management Practical Course for SIFC (in Eng.)	UE	5
Human Nutrition (in Eng.)	VO	3
Lebensmittelchemie Übungen für SIFC (in Eng.)	UE	3
Molecular Biology for Food Analysis (in Eng.)	VU	3
Food Authenticity Practical Course (in Eng.)	UE	3

Validation of Cleaning Processes and Hygienic Design (in Eng.)	VO	3
Analysis of Bio-Hazards in Foods (in Eng.)	VU	3
Automatic Identification Technology in Food Industry (in Eng.)	VU	3
Food Safety in Livestock Feeding (in Eng.)	VO	3
National and International Food Safety Authorities (in Eng.)	SE	3
Food Biotechnology (in Eng.)	VO	5
Focus Area "Food Safety and Consumer Science" St.István	Course type	ECTS credits
course title		
Fish production in ponds	-	4
Animal hygiene and health	-	3
Food and feed safety	-	3
Plant Protection Strategies and Systems	-	3

Focus Area "Sustainable Agriculture" BOKU	Course type	ECTS credits
course title		
Animal Production in Organic Agriculture (in Eng.) (*)	VO	4
Ecological basis of biological control (in Eng.) (*)	VO	3
Ecological Plant Protection (in Eng.) (*)	VU	3
Plant and Environment (in Eng.) (*)	VO	3
Richtlinien, Zertifizierung und Akkreditierung in der ÖLW (in Eng.) (*)	VS	3
Development Innovation (in Eng.)	VS	3
Applied Development Research I (in Eng.)	VS	3
Obst- und Weinbau in der ÖLW (in Eng.)	VX	3
Gemüse- und Zierpflanzenbau in der ÖLW (in Eng.)	VX	3
Physiology and management of grapevines (in Eng.)	VO	3
Medicinal and aromatic plants (in Eng.)	VO	3
Rhizosphere Processes and Application to Agriculture and Soil Protection (in Eng.)	VO	3
System Analysis and Scenario Technique - Methods and Practises (in Eng.)	SE	5
Soil Fertility and Soil Ecology in Organic Agriculture (in Eng.)	VU	3
Production systems and atmospheric pollution (in Eng.)	VO	3
Safety and Quality of Organic Foods (in Eng.)	VO	3
Local Knowledge and Ethnobiology in Organic Farming – Introduction (in Eng.)	VO	1
Local Knowledge in Organic Farming - Methods seminar (in Eng.)	SE	2
Facilitating change for sustainable development	VS	3

Focus Area "Sustainable Agriculture" St.István	Course type	ECTS credits
course title		
Climate change adaption	-	3
Integrated Crop Production	-	3
Integrated Horticultural Production	-	2
Plant Protection Strategies and Systems	-	3
Adaptable soil tillage	-	3

Focus Area "Intercultural Learning" BOKU	Course type	ECTS credits
course title		
Summer School 1: Intercultural Training for the Danube Region and regional aspects in agriculture and food production (in Eng.) (*)	IP	4
Summer School 2: Intercultural Training for the Danube Region and regional aspects in agriculture and food production (in Eng.)(*)	IP	4
Decision Making in Management with Special Emphasis on Cultural Differences (in Eng.)	VO	3
Principles of Empirical Research Methods in the Social Sciences (in Eng.)	VS	3
Negotiating Change: Simulating an international conference for sustainable development (in Eng.)	VS	3
Institutions and Policies of the EU (Introduction to the Law and Politics of the European Union - in Eng.)	VO	3
Focus Area "Intercultural Learning" St.István	Course type	ECTS credits
course title		
European studies	-	2
Hungarian language and culture	-	2

§ 5 ELECTIVE COURSES

Elective courses worth a total of 22 ECTS credits are required to complete the master's programme.

A minimum of 10 ECTS credits per focus area have to be completed.

Courses that have not been chosen as compulsory courses may be used as elective courses.

Focus Area "Sustainable rural and regional development and policy" BOKU	Course type	ECTS credits
course title		
Innovations for Sustainable Forest Management (in Eng.)	VS	4
Forest Resource Economics (in Eng.)	VS	4,5
Sustainable Rural Development (in Eng.)	VS	3
Resource and Environmental Economics (in Eng.)	VO	3
Globalisation and Rural Development (in Eng.)	VO	3
Regional Economics and Regional Governance (in Eng.)	VO	3
Rural Tourism (in Eng.)	VO	2
Economics of Multiple Use Forestry (in Eng.)	VS	1,5
Livelihood system dynamics in rural development (in Eng.)	VS	1,5

Focus Area "Food Safety and Consumer Science" BOKU*	Course type	ECTS credits
course title		
Cereal technology (in Eng.)	VO	2
Food Safety and Risk Management (in Eng.)	VS	3
Food Microbiology for SIFC (in Eng.)	VO	4
Lebensmittelmikrobiologie Übungen für SIFC (in Eng.)	UE	3
Practical Course in Food Processing (in Eng.)	UE	5
Applied Quality Management Practical Course for SIFC (in Eng.)	UE	5
Lebensmittelchemie (für SIFC) (in Eng.)	VO	4
Human Nutrition (in Eng.)	VO	3
Lebensmittelchemie Übungen für SIFC (in Eng.)	UE	3
Molecular Biology for Food Analysis (in Eng.)	VU	3
Food Authenticity Practical Course (in Eng.)	UE	3
Validation of Cleaning Processes and Hygienic Design (in Eng.)	VO	3
Analysis of Bio-Hazards in Foods (in Eng.)	VU	3
Automatic Identification Technology in Food Industry (in Eng.)	VU	3
Food Safety in Livestock Feeding (in Eng.)	VO	3
National and International Food Safety Authorities (in Eng.)	SE	3
Food Biotechnology (in Eng.)	VO	5
Focus Area "Food Safety and Consumer Science" St.István*	Course type	ECTS credits
course title		
Fish production in ponds	-	4
Animal hygiene and health	-	3
Food and feed safety	-	3

Plant Protection Strategies and Systems	-	3
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Focus Area "Biodiversity and sustainable use of natural resources" BOKU	Course type	ECTS credits
course title		
Biocultural Diversity in Rural Landscapes (in Eng.)	VS	3
Biodiversity and conservation of mountain forests (in Eng.)	VS	2
Multiple Criteria Decision Making in Natural Resource Management (in Eng.)	VS	3
Protection and mitigation measures against natural hazards (in Eng.)	VX	3
Soil Fertility and Soil Ecology in Organic Agriculture (in Eng.)	VU	3
Role of Soils in Nature Conservation and Wildlife Management (in Eng.)	VU	1,5
Soil erosion models and their application (in Eng.)	VU	4,5
Soil Conservation and Soil Protection (in Eng.)	VU	3
Valuation Methods for Natural Resources (in Eng.)	VO	3
Possible Impacts of Climate Change on Water Resources (in Eng.)	VO	3
Facilitating change for sustainable development (in Eng.)	VS	3
Focus Area "Biodiversity and sustainable use of natural resources" St.István	Course type	ECTS credits
course title		
Soil functions in our environment	-	3
Monitoring biodiversity	-	2
GIS applications in natural resource management	-	3
Waste management and renewable energy		2
Biometry	-	2

Focus Area "Sustainable Agriculture" BOKU*	Course type	ECTS credits
course title		
Development Innovation (in Eng.)	VS	3
Applied Development Research I (in Eng.)	VS	3
Ecological Plant Protection (in Eng.)	VU	3
Ecological basis of biological control (in Eng.)	VO	3
Obst- und Weinbau in der ÖLW (in Eng.)	VX	3
Gemüse- und Zierpflanzenbau in der ÖLW (in Eng.)	VX	3
Physiology and management of grapevines (in Eng.)	VO	3
Medicinal and aromatic plants (in Eng.)	VO	3
Animal Production in Organic Agriculture (in Eng.)	VO	4

Richtlinien, Zertifizierung und Akkreditierung in der ÖLW (in Eng.)	VS	3
Rhizosphere Processes and Application to Agriculture and Soil Protection (in Eng.)	VO	3
System Analysis and Scenario Technique - Methods and Practises (in Eng.)	SE	5
Plant and Environment (in Eng.)	VO	3
Soil Fertility and Soil Ecology in Organic Agriculture (in Eng.)	VU	3
Production systems and atmospheric pollution (in Eng.)	VO	3
Safety and Quality of Organic Foods (in Eng.)	VO	3
Local Knowledge and Ethnobiology in Organic Farming – Introduction (in Eng.)	VO	1
Local Knowledge in Organic Farming - Methods seminar (in Eng.)	SE	2
Facilitating change for sustainable development (in Eng.)	VS	3
Focus Area "Sustainable Agriculture" St.István*	Course type	ECTS credits
course title		
Climate change adaption	-	3
Integrated Crop Production	-	3
Integrated Horticultural Production	-	2
Plant Protection Strategies and Systems	-	3
Adaptable soil tillage	-	3

Focus Area "Soil, water and climate" BOKU	Course type	ECTS credits
course title		
Meteorological conditions and precipitation (in Eng.)	VS	3
Lecture Series in Soil, Water and Atmosphere (in Eng.)	VO	3
Soils and Global Change (in Eng.)	SE	4
Water Resources Planning and Management (in Eng.)	VO	3
Soil Physics and Chemistry (in Eng.)	VO	3
Soils and food security (in Eng.)	VO	1,5
Focus Area "Soil, water and climate" St.István	Course type	ECTS credits
course title		
Modern soil observation and conservation methods	-	2
GIS applications in natural resource management	-	3
Climate change adaption	-	3
Soil functions in our environment	-	3
Ecotoxicology		2
Agroclimatology	-	2

Focus Area "Biotechnology" BOKU	Course type	ECTS credits
course title		
Bioprocess Engineering I (in Eng.)	VU	4
Plant Biotechnology (in Eng.)	VO	3
Animal Cell Culture (in Eng.)	VO	2
Biochemical and Biotechnological Methods (Analytics Design) (in Eng.)	VU	3
Quality Management in Biotechnology (in Eng.)	VU	3
Cell Biology (in Eng.)	VO	3
Methods in Cell Biology (in Eng.)	VO	3
Cell Factory - Plants	UE	3
Pflanzenproduktion (in Eng.)	VO	3
Safety Aspects of Plant Biotechnology (in Eng.)	VO	3
Molecular Phytopathology (in Eng.)	VU	4
Genetically Modified Organisms in the Environment (in Eng.)	SE	2
Focus Area "Biotechnology" St.István	Course type	ECTS credits
course title		
Bioinformatics	-	3
Biotechnology of Reproduction	-	3
Molecular Biology and Gene Technology and Methodology	-	4
Gene Mapping in domestic animals	-	3
Molecular Genetics	-	3
Fish Biotechnology	-	3

Focus Area "Regional specialties" BOKU	Course type	ECTS credits
course title		
Physiology and management of grapevines (in Eng.)	VO	3
Medicinal and aromatic plants (in Eng.)	VO	3
Floriculture (in Eng.)	VS	3
Methods in horticultural physiology (in Eng.)	US	3
Genetic Control of Secondary Metabolites in Perennial Crop Plants (in Eng.)	VO	3
Viticultural and Pomology Journal Club (in Eng.)	SE	3

Focus Area "Sustainable energy systems" BOKU	Course type	ECTS credits
course title		
Technology Assessment (in Eng.)	VS	3
Computer Simulation in Energy and Resource Economics (in Eng.)	VS	3

Applied Mathematical Programming in Natural Resource Management (in Eng.)	VS	3
Global Waste Management I (in Eng.)	VO	3
Global Waste Management II (in Eng.)	VO	3
Nachertetechnologie (in Eng.)	VO	3
Production systems and atmospheric pollution (in Eng.)	VO	3
Operations Reserach and System Analysis (in Eng.)	VU	3
Focus Area "Sustainable energy systems" St.István	Course type	ECTS credits
course title		
Energy crop production	-	2
Waste management and renewable energy	-	2
Plant Protection Strategies and Systems	-	3
Adapted soil tillage	-	3

Focus Area "Intercultural Learning" BOKU*	Course type	ECTS credits
course title		
Summer School 1: Intercultural Training for the Danube Region and regional aspects in agriculture and food production (in Eng.)	IP	4
Summer School 2: Intercultural Training for the Danube Region and regional aspects in agriculture and food production (in Eng.)	IP	4
Decision Making in Management with Special Emphasis on Cultural Differences (in Eng.)	VO	3
Principles of Empirical Research Methods in the Social Sciences (in Eng.)	VS	3
Negotiating Change: Simulating an international conference for sustainable development (in Eng.)	VS	3
Institutions and Policies of the EU (Introduction to the Law and Politics of the European Union - in Eng.)	VO	3
Focus Area "Intercultural Learning" St.István*	Course type	ECTS credits
course title		
European studies	-	2
Hungarian language and culture	-	2

§ 6 FREE ELECTIVE COURSES

Free electives worth a total of 18 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. 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 MASTER´S THESIS

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

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

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

The master's thesis is 30 ECTS credits and is supervised both by a competent professional person at BOKU or SZIU and a second competent professional person at a cooperating university. Co-supervision of the thesis is obligatory.

§ 8 COMPLETION

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 defence examination.

§ 9 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 two partner institutions University of Natural resources and Life Sciences, Vienna (Austria) and Szent István University, Gödöllő (Hungary). The academic degree MSc (M.Sc.) shall follow the holder'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 exam, upon successful completion of the 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.

The international joint master's programme in Sustainability in Agriculture, Food production and Food technology is implemented as a joint degree offered by the University of Natural Resources and Life Sciences, Vienna (Austria) and Szent István University (SZIE), Gödöllő (Hungary) with contributions (courses, MSc thesis supervision, summer schools...) from the following partner universities: Corvinus University Budapest (HU), CULS Prague (CZ), WULS (PL), University of Zagreb (HR), University of Novi Sad (SR), Slovak Agricultural University Nitra (SK) USAMVBT Timisoara (RO). Graduates receive a joint master degree in Sustainability in Agriculture, Food production and Food technology from BOKU and SZIE.

§ 10 EXAMINATION REGULATIONS

(1) The master's programme in Sustainability in Agriculture, Food production and Food technology 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 50 ECTS credits (§ 4);
- positive completion of elective courses worth a total of 22 ECTS credits (§ 5);
- positive completion of free elective courses worth a total of 18 ECTS credits (§ 6); and
- 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 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) After the successful completion of all the courses and examinations required in the master's programme, the completed master's thesis, after it has been given a positive evaluation by the thesis supervisors, shall be publically presented by the student and defended in the form of an academic discussion (defence examination). The committee shall consist of a

committee chair and two additional university teachers with a *venia docendi* or equivalent qualification. The student's total performance (thesis and 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 rationale 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%

(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 need to fulfill the distinction criteria of Szent István University, Gödöllő (Hungary) additionally.

§ 11 EFFECT

This curriculum shall take effect on 1.10.2014.

ANNEX A TYPES OF COURSES

The following types of courses are available:

(Please only offer course types included in this list from now on.)

Lecture (VO)

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

Exercise course (UE)

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

Practical course (PR)

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

Compulsory internship seminar (PP)

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

Seminar (SE)

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

Field trips (EX)

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

Interdisciplinary Project Study (IP)

Master thesis seminar (MA)

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

Mixed-type courses:

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

Lecture and seminar (VS)

Lecture and exercise (VU)

Lecture and field trip (VX)

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.

Seminar and field trip (SX)**Exercise and seminar (US)****Exercise and field trip (UX)**

ANNEX B COURSES OF CONSORTIA MEMBER

Focus Area "Sustainable rural and regional development and policy"			
Course title	Course type	ECTS credits	Semester
BOKU			
Innovations for Sustainable Forest Management (in Eng.)	VS	4	W
Forest Resource Economics (in Eng.)	VS	4,5	W
Sustainable Rural Development (in Eng.)	VS	3	W
Resource and Environmental Economics (in Eng.)	VO	3	S
Globalisation and Rural Development (in Eng.)	VO	3	S
Regional Economics and Regional Governance (in Eng.)	VO	3	S
Rural Tourism (in Eng.)	VO	2	S
Economics of Multiple Use Forestry (in Eng.)	VS	1,5	S
Livelihood system dynamics in rural development (in Eng.)	VS	1,5	S
	Total	25,5	
CULS			
Environmental economics	-	5	S
Landscape Planing	-	6	S
Rural Development	-	5	S
	Total	16	
NoviSad			
Modern Farm Management	-	5	W
Weather derivatives and risk management in agriculture: Theory and applications	-	5	W
	Total	10	
Zagreb			
Agri-environmental law and policy	-	3	W
Environmental Risk Analysis and Management	-	3	W
Investments and investment projects in Agribusiness	-	3	W
Regional marketing	-	3	W
	Total	12	

Focus Area "Food Safety and Consumer Science"			
Course title	Course type	ECTS credits	Semester
BOKU			
Cereal technology (in Eng.)	VO	2	W
Food Safety and Risk Management (in Eng.)	VS	3	W
Food Microbiology for SIFC (in Eng.)	VO	4	W
Lebensmittelmikrobiologie Übungen für SIFC (in Eng.)	UE	3	W
Practical Course in Food Processing (in Eng.)	UE	5	W

Applied Quality Management Practical Course for SIFC (in Eng.)	UE	5	W
Lebensmittelchemie (für SIFC) (in Eng.)	VO	4	W
Human Nutrition (in Eng.)	VO	3	W
Lebensmittelchemie Übungen für SIFC (in Eng.)	UE	3	W
Molecular Biology for Food Analysis (in Eng.)	VU	3	W
Food Authenticity Practical Course (in Eng.)	UE	3	W/S
Validation of Cleaning Processes and Hygienic Design (in Eng.)	VO	3	S
Analysis of Bio-Hazards in Foods (in Eng.)	VU	3	S
Automatic Identification Technology in Food Industry (in Eng.)	VU	3	S
Food Safety in Livestock Feeding (in Eng.)	VO	3	S
National and International Food Safety Authorities (in Eng.)	SE	3	S
Food Biotechnology (in Eng.)	VO	5	S
	Total	58	
St.István			
Fish production in ponds	-	4	W
Animal hygiene and health	-	3	W
Food and feed safety	-	3	W
Plant Protection Strategies and Systems	-	3	W
	Total	13	
Corvinus			
Instrumental analysis	-	3	W
Microbiological safety and quality in the food processing	-	5	W
Sensory analysis I.	-	4	W
Sensory analysis II.	-	4	W
	Total	16	
CULS			
Food beverages and Food Additives (AMA14E)	-	5	S
Food Quality and Food safety	-	5	S
	Total	10	
Nitra			
Food Safety and Control	-	6	W/S
Foodborne Disease	-	4	W/S
Legislation and Food Control	-	4	W/S
Food Adulteration and Authentication	-	4	S
Food Microbiology	-	6	S
Food Safety	-	6	S
Health Safety Aspects of food	-	4	S
Risk Assessment	-	4	S
	Total	38	

WULS			
Food and nutrition policy	-	2	W
Alcoholic beverages and human being	-	3,5	W/S
Beer. Famous world styles – technological implications	-	3	W/S
Bioengineering in food industry	-	2	W/S
Chemistry and technology of fats and oils	-	3,5	W/S
Chemistry of natural compounds	-	6	W/S
Ecological aspects of food and nutrition	-	6	W/S
Instrumental methods for biological sample (mixture) analysis	-	4	W/S
Smart food	-	3,5	W/S
Nutrition psychology and sociology	-	3	S
	Total	36,5	

Focus Area "Biodiversity and sustainable use of natural resources"			
Course title	Course type	ECTS credits	Semester
BOKU			
Multiple Criteria Decision Making in Natural Resource Management (in Eng.)	VS	3	W
Role of Soils in Nature Conservation and Wildlife Management (in Eng.)	VU	1,5	W
Soil Conservation and Soil Protection (in Eng.)	VU	3	W
Soil erosion models and their application (in Eng.)	VU	4,5	W
Biocultural Diversity in Rural Landscapes (in Eng.)	VS	3	S
Biodiversity and conservation of mountain forests (in Eng.)	VS	2	S
Protection and mitigation measures against natural hazards (in Eng.)	VX	3	S
Soil Fertility and Soil Ecology in Organic Agriculture (in Eng.)	VU	3	S
Valuation Methods for Natural Resources (in Eng.)	VO	3	S
Possible Impacts of Climate Change on Water Resources (in Eng.)	VO	3	S
Facilitating change for sustainable development (in Eng.)	VS	3	S
	Total	32	
St.István			
Soil functions in our environment	-	3	S
Monitoring biodiversity	-	2	S
GIS applications in natural resource management	-	3	S
Waste management and renewable energy	-	2	S
Biometry	-	2	S
	Total	12	

CULS			
Biodiversity	-	6	W
Conservation Genetics	-	6	W
Game Management	-	5	W
River restoration	-	6	W
Animals Ecology and Conservation	-	5	S
Conservation Biology	-	6	S
Non-ForestVegetation	-	6	S
Wetlands Concervation and Management	-	6	S
	Total	46	
NoviSad			
Agroecological Concepts in Sustainable Food Production	-	6	W
Constructed Wetlands in Protection of Water Resources	-	6	W
	Total	12	
Zagreb			
Geomorphology and landscape ecology	-	3	S
Microbial ecology	-	6	S
Molecular diversity and evolution	-	6	S
	Total	15	

Focus Area "Sustainable Agriculture" BOKU			
Course title	Course type	ECTS credits	Semester
BOKU			
Development Innovation (in Eng.)	VS	3	W
Applied Development Research I (in Eng.)	VS	3	W
Ecological Plant Protection (in Eng.)	VU	3	W
Ecological basis of biological control (in Eng.)	VO	3	W
Obst- und Weinbau in der ÖLW (in Eng.)	VX	3	W
Gemüse- und Zierpflanzenbau in der ÖLW (in Eng.)	VX	3	W
Physiology and management of grapevines (in Eng.)	VO	3	W
Medicinal and aromatic plants (in Eng.)	VO	3	W
Animal Production in Organic Agriculture (in Eng.)	VO	4	W
Richtlinien, Zertifizierung und Akkreditierung in der ÖLW (in Eng.)	VS	3	W
Rhizosphere Processes and Application to Agriculture and Soil Protection (in Eng.)	VO	3	W
System Analysis and Scenario Technique - Methods and Practises (in Eng.)	SE	5	W
Plant and Environment (in Eng.)	VO	3	W
Soil Fertility and Soil Ecology in Organic Agriculture (in Eng.)	VU	3	S

Production systems and atmospheric pollution (in Eng.)	VO	3	S
Safety and Quality of Organic Foods (in Eng.)	VO	3	S
Local Knowledge and Ethnobiology in Organic Farming – Introduction (in Eng.)	VO	1	S
Local Knowledge in Organic Farming - Methods seminar (in Eng.)	SE	2	S
Facilitating change for sustainable development (in Eng.)	VS	3	S
	Total	57	
St.István			
Climate change adaption	-	3	S
Integrated Crop Production	-	3	S
Integrated Horticultural Production	-	2	S
Plant Protection Strategies and Systems	-	3	S
Adaptable soil tillage	-	3	S
	Total	14	
Corvinus			
Economics and marketing in the food industry	-	3	W
Plant design in the food industry	-	5	W
The competitiveness of Hungarian food economy	-	4	W
	Total	12	
CULS			
Alternative agriculture	-	5	S
Land Management	-	6	S
	Total	11	
NoviSad			
Agroecological Concepts in Sustainable Food Production	-	6	W
Farm crops drying and storing	-	7	W
Fruit and vegetable postharvest technology	-	6	W
Crop Ecophysiology	-	7	S
Decision-Making in Agriculture	-	6	S
Plant Nutrition in Sustainable Agriculture	-	7	S
Water Resources Management for Sustainable Agriculture	-	6	S
Water Resources Systems Analysis Techniques	-	6	S
	Total	51	
WULS			
Ecological observations of plant communities	-	6	W
Introduction to precision agriculture	-	4	W
Ecological observations of plant communities	-	6	W/S
Ecology of grassland	-	8	S
Introduction to precision agriculture	-	4	S
Organic agriculture	-	2	S
	Total	30	

Zagreb			
Field crops management	-	6	W
Livestock production and the environment	-	3	W
Plant pest management	-	3	W
Water Management in Agriculture	-	3	W
Applied plant nutrition	-	6	S
Beneficial associations of plant and microorganisms	-	6	S
Microbial enzymatic activities in soil	-	3	S
Organic farming	-	6	S
Plant ecophysiology	-	3	S
Rhizosphere ecology	-	3	S
Use and conservation of water resources	-	6	S
	Total	48	

Focus Area "Soil, water and climate" BOKU			
Course title	Course type	ECTS credits	Semester
BOKU			
Meteorological conditions and precipitation (in Eng.)	VS	3	W
Lecture Series in Soil, Water and Atmosphere (in Eng.)	VO	3	W
Soils and Global Change (in Eng.)	SE	4	W
Water Resources Planning and Management (in Eng.)	VO	3	W
Soil Physics and Chemistry (in Eng.)	VO	3	W
Soils and food security (in Eng.)	VO	1,5	W
	Total	17,5	
St.István			
Modern soil observation and conservation methods	-	2	S
GIS applications in natural resource management	-	3	S
Climate change adaption	-	3	S
Soil functions in our environment	-	3	S
Ecotoxicology	-	2	S
Agroclimatology	-	2	S
	Total	15	
CULS			
GIS for Nature Conservation	-	5	W
Water Resources Managment	-	6	W
Environmental geochemistry	-	5	S
Groundwater Flow and Contaminant Transport	-	6	S
	Total	22	

WULS			
Climate change impacts on plant growth and crop yield	-	10	W/S
Physiology of plants and its production under climate change	-	4	W/S
Soil biology	-	6	W/S
Water microbiology	-	6	W/S
	Total	26	
Zagreb			
Agroclimatology and climate change	-	3	W
Aquatic ecosystem and biodiversity	-	3	W
Environmental Soil Science	-	6	W
Global ecology	-	3	W
Hydrology and water resources	-	6	W
Mineralogy and petrology	-	3	W
Spatial analysis and GIS	-	3	W
	Total	27	

Focus Area "Biotechnology" BOKU			
Course title	Course type	ECTS credits	Semester
BOKU			
Bioprocess Engineering I (in Eng.)	VU	4	W
Plant Biotechnology (in Eng.)	VO	3	W
Animal Cell Culture (in Eng.)	VO	2	W
Biochemical and Biotechnological Methods (Analytics Design) (in Eng.)	VU	3	W
Quality Management in Biotechnology (in Eng.)	VU	3	S
Cell Biology (in Eng.)	VO	3	S
Methods in Cell Biology (in Eng.)	VO	3	S
Cell Factory - Plants	UE	3	S
Pflanzenproduktion (in Eng.)	VO	3	S
Safety Aspects of Plant Biotechnology (in Eng.)	VO	3	S
Molecular Phytopathology (in Eng.)	VU	4	S
Genetically Modified Organisms in the Environment (in Eng.)	SE	2	S
	Total	36	

St.István			
Bioinformatics	-	3	W
Biotechnology of Reproduction	-	3	W
Molecular Biology and Gene Technology and Methodology	-	4	W
Gene Mapping in domestic animals	-	3	W
Molecular Genetics	-	3	W
Fish Biotechnology	-	3	W
	Total	19	
Corvinus			
Bioinformatic and protein engineering	-	2	S
Fermented and functional food	-	3	S
Food enzymology	-	3	S
Immobilized enzymes and cells	-	3	S
	Total	11	
Nitra			
Biotechnology in Animal Production	-	6	W/S
Embryotechnology	-	6	W/S
Foreign Matters in Food Chain	-	4	W/S
Animal Pathophysiology	-	4	S
Biotechnology in Plant Production	-	6	S
Food Microbiology	-	6	S
	Total	32	
WULS			
Breeding Methods for Fruit and Ornamental Plants	-	6	W/S
Genomics	-	2	W/S
Molecular Biology	-	2	W/S
Social and legal aspects of biotechnology	-	1	W/S
	Total	11	

Focus Area "Regional specialties" BOKU			
Course title	Course type	ECTS credits	Semester
BOKU			
Physiology and management of grapevines (in Eng.)	VO	3	W
Medicinal and aromatic plants (in Eng.)	VO	3	W
Floriculture (in Eng.)	VS	3	W
Methods in horticultural physiology (in Eng.)	US	3	W
Genetic Control of Secondary Metabolites in Perennial Crop Plants (in Eng.)	VO	3	W
Viticultural and Pomology Journal Club (in Eng.)	SE	3	W
	Total	18	
WULS			
Horse Breeding in Poland	-	3	W
Agribusiness – sector analysis on the Polish case	-	5	W/S
Diversity of plant communities in Poland	-	3	W/S
Fur animals farming in poland according to eu recommendations	-	2	W/S
	Total	13	

Focus Area "Sustainable energy systems" BOKU			
Course title	Course type	ECTS credits	Semester
BOKU			
Technology Assessment (in Eng.)	VS	3	W
Computer Simulation in Energy and Resource Economics (in Eng.)	VS	3	W
Applied Mathematical Programming in Natural Resource Management (in Eng.)	VS	3	W
Global Waste Management I (in Eng.)	VO	3	W
Global Waste Management II (in Eng.)	VO	2	S
Nachertetechnologie (in Eng.)	VO	3	S
Production systems and atmospheric pollution (in Eng.)	VO	3	S
Operations Reserach and System Analysis (in Eng.)	VU	3	S
	Total	23	
St.István			
Energy crop production	-	2	S
Waste management and renewable energy	-	2	S
Plant Protection Strategies and Systems	-	3	S
Adapted soil tillage	-	3	S
	Total	10	

Zagreb			
Ecological aspects of grassland management	-	6	S
Field crops and bioenergy cropping systems	-	3	S
Renewable Energy for Rural Areas	-	3	S
Waste management in agriculture	-	6	S
	Total	18	

Focus Area "Intercultural Learning" BOKU			
Course title	Course type	ECTS credits	Semester
BOKU			
Summer School 1: Intercultural Training for the Danube Region and regional aspects in agriculture and food production (in Eng.)	IP	4	W/S
Summer School 2: Intercultural Training for the Danube Region and regional aspects in agriculture and food production (in Eng.)	IP	4	W/S
Decision Making in Management with Special Emphasis on Cultural Differences (in Eng.)	VO	3	S
Principles of Empirical Research Methods in the Social Sciences (in Eng.)	VS	3	S
Negotiating Change: Simulating an international conference for sustainable development (in Eng.)	VS	3	W
Institutions and Policies of the EU (Introduction to the Law and Politics of the European Union - in Eng.)	VO	3	W/S
	Total	20	
St.István			
European studies	-	2	W
Hungarian language and culture	-	2	W
	Total	4	
CULS			
Essentials of diplomacy	-	5	W
EU Integration	-	5	W
Psychology of Organization and Behaviour at Work	-	5	W
Foreign policy and international relations	-	4	S
Law in EU	-	4	S
Rural sociology (from 2014/2015, until then Introduction to Sociology)	-	5	S
	Total	28	

WULS			
Demography and Demographic Changes in EU Member States	-	6	W/S
Economic Policy of the European Union	-	5	W/S
European Social Policy	-	6	W/S
Small and Medium-sized Enterprises in European Union	-	6	W/S
Trade Policy of the European Union	-	5	W/S
	Total	28	