



Curriculum of the Master degree programme

“Agricultural Biology”

Code: 066 459

**University of Natural Resources
and Life Sciences, Vienna**

Center for International Relations

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

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As at October 1st, 2010

§ 1 Description of qualification

Recent agricultural science research, development and practical input in many aspects rest upon biological disciplines which range from ecosystems to molecular biology.

Participants in this Master degree programme acquire a multidisciplinary and cross-curricular knowledge which enables them to work flexibly in areas such as nature conservation as well as for agrarian institutions or the nourishment industry. A special perspective opens up through the immense professional proximity to agrarian practical experiences which also includes technical as well as socio-economic aspects.

The special professional qualification comprises knowledge of the most influential scientific foundations on the analysis and usage of biological structures and processes ranging from molecular to aspects of the ecosystem. There is a heavy focus on teaching scientific and analytical modes of operation as well as the mastery of necessary methods, both of which are intertwined with an intense practical reference to research, development and management in agrarian domains.

Apart from this, this master degree program provides the students with the opportunity to gain basic professional and personal abilities, such as interdisciplinary thinking and goal orientated problem solving strategies and social competence.

The master degree program for Agricultural Biology provides numerous possibilities for international contact, exchange and stays abroad.

Professional positions after completion of the Master degree program Agricultural Biology will be found in diverse areas of nature conservation, environmental protection and consumer protection. Furthermore, also in research and development within the public and industrial sector, in administration, information systems (such as the media or counselling) and in expert lobbies and representational organisations (such as Chambers, scientific associations or NGOs).

Due to their broadness and practice – orientation of their training graduates of the master program for Agro-Biology are especially qualified for emerging occupational fields at the interface of agricultural sciences, ecology and biotechnology.

§ 2 Format of the Master degree programme

The Master degree programme in Agricultural Biology comprises four semesters and is made up of 120 ECTS credits. Of the total number of credits 33 ECTS are compulsory courses (according to § 2 (1)), 37 ECTS are elective courses (according to §2 (2)), and 20 ECTS are free elective courses. 30 ECTS are assigned to the thesis for the Master degree.

(1) Compulsory courses (P – “Pflichtfächer”) – 33 ECTS

P-1 General courses	4.5 ECTS
P-2 Basics of Agricultural Biology	28.5 ECTS

(2) Elective courses (W – “Wahlfächer”) – 37 ECTS

Courses to an extent of 37 ECTS have to be chosen and completed successfully from W-1 to W-9.

(3) Free elective courses (FW – “Freie Wahlfächer”) – 20 ECTS

Courses to an extent of 20 ECTS have to be completed. These courses may be taken from the entire range of courses of all accredited national and international universities. It is recommended to choose and complete courses from the Master degree programme Agricultural Biology and other agrarian Master degree programmes at the University of Natural Resources and Life Sciences, Vienna, for the free elective courses.

(4) Thesis for the Master degree – 30 ECTS

The graduation paper is a scientific piece of work which serves the evidence of the students' ability to work on a scientific subject autonomously and in a way that is justifiable regarding content as well as methodology. (§ 51 (1) Z. 8 UG 2002).

§ 3 Academic qualification

According to § 54 (1) of the university law of 2002 the Master degree programme Agricultural Biology is an engineering degree. In accordance with this classification of engineering degrees, graduates of the Master degree programme Agricultural Biology will be awarded the academic qualification “Diplom-Ingenieur of technical sciences”, shortened to “Dipl-Ing.” or “DI”.

§ 4 Types of courses

Courses within this degree are defined as follows:

(1) Lectures (VO):

Courses in which portions of an academic discipline and the methods involved are didactically presented.

(2) Practical exercises (UE):

Practical exercises are courses which are in professional connection to a lecture. They serve to apply specific practical abilities and skills presented theoretically during the lectures. Furthermore, these practical exercises also serve the acquisition of specific practical knowledge.

(3) Seminars (SE):

Seminars are courses which assist in the development of academic abilities. They serve to acquire knowledge autonomously and deepen learned course content and scientific discussion.

(4) Excursions (EX):

Excursions are courses held in Austria and abroad and focus on aspects of the Master degree programme which cannot be imparted at the University of Natural Resources and Life Science itself.

(5) Project courses (PJ):

These are characterised by problem-based learning. Within a certain topic, students work, primarily in small groups with assistance, through case studies involving the definition of a problem through realisation of the project to the production of written work.

(6) Combinations (VU, VX, VZ, VY, VS, UX, UY, SX)

Courses in which aspects of courses referred to in (1) to (4) are combined didactically:

- Lectures with practical exercises (VU)
- Lectures with excursions (VX)
- Lectures with seminars and excursions (VSX = VY)
- Lectures with practical exercises and excursions (VUX = VZ)
- Lectures with seminars (VS)
- Exercises with excursions (UX)
- Exercises with seminars and excursion (USX = UY)
- Seminars with excursion (SX)

(7) If necessary courses can also be held out of the University of Natural Resources and Life Science, Vienna.

§ 5 Timetable of courses¹

Used abbreviations:

SST = weekly semester hours

ECTS = European Credit Transfer System points

WS = Winter Semester

SS = Summer Semester

(1) General compulsory courses (P-1)

Courses to an extent of 4,5 ECTS have to be completed successfully from P-1.

<i>Number</i>	<i>Type</i>	<i>Name</i>	<i>Semester</i>	<i>SST</i>	<i>ECTS</i>
P-1 General courses					
833.304	UX	Interdisciplinary Excursion Ecology	SS	1.0	1.5
953.323	EX	Excursions Microbiology and Biotechnology	WS	1.0	1.0
	SE	Master Thesis Seminar ²	WS or SS	2.0	2.0

¹ A more detailed description of all courses, including objective of the course, course contents, name of lecturer, prerequisites, recommended reading, teaching methods, assessment methods and language of instruction, is found in the BOKUonline: <https://online.boku.ac.at/>

² The Master Thesis Seminar is completed at the institute at which the thesis is supervised. Please contact your thesis supervisor for further information.

(2) Compulsory courses (P-2)

Courses to an extent of 28.5 ECTS have to be completed successfully from P-2.

<i>Number</i>	<i>Type</i>	<i>Name</i>	<i>Semester</i>	<i>SST</i>	<i>ECTS</i>
P-2 Master degree seminar and excursion					
772.312	VO	Plant Biochemistry	WS	2.0	2.0
831.314	VU	Autecology and Population Biology of Plants in Agricultural Habitats	WS	2.0	3.0
833.301	VO	Soil Ecology	WS	2.0	3.0
833.308	VU	Selected Animals of Central European Landscapes	SS	4.0	4.0
911.300	VO	Soil Physics and Soil Chemistry	WS	2.0	3.0
951.320	VO	Plant Breeding (Breeding Methodology)	WS	2.0	3.0
953.301	VO	The Ecological Basis of Biological Control	WS	2.0	3.0
953.316	VS	Phytopathology	WS	2.0	3.0
954.321	VO	Plant Molecular Biology	SS	2.0	3.0

(3) Elective courses (W)

Courses to an extent of 37 ECTS have to be chosen and completed successfully from W-1 to W-9.

<i>Number</i>	<i>Type</i>	<i>Name</i>	<i>Semester</i>	<i>SST</i>	<i>ECTS</i>
W-1 Methods and Tools					
772.112	UE	Practical Course in Biochemistry I	WS or SS	5.0	5.0
831.315	VO	Multivariate Analysis of Ecological Data Sets	WS	2.0	3.0
831.316	UE	Multivariate Analysis of Ecological Data Sets – Exercises	WS	1.0	1.5
831.317	SE	Formulation of Questions and Experimental Design in Ecological Research	WS	3.0	4.5
831.318	VO	Biological Monitoring	WS	2.0	3.0
831.329	VO	Evaluation of Ecosystem Functions for Nature Conservancy in Cultural Landscapes	WS	2.0	3.0
831.332	VS	Techniques for Plant Determination	WS	1.0	1.5
831.333	UX	Techniques for Plant Determination	SS	1.0	1.5
857.320	UE	Remote Sensing and GIS in Natural Resource Management	WS	2.0	3.0
953.304	VZ	Principles and Methods in Weed Control	WS & SS	1.0+1.0	3.0
953.306	UE	Laboratory Diagnosis of Plant Damages	WS	2.0	3.0
954.310	VU	Phylogenetic Evaluation of DNA Sequences	WS	2.0	2.0

<i>Number</i>	<i>Type</i>	<i>Name</i>	<i>Semester</i>	<i>SST</i>	<i>ECTS</i>
W-2 Soil					
833.303	VO	Soil Zoology	WS	2.0	3.0
833.305	SE	Colloquium Soil Biology	SS	1.0	1.5
911.307	PJ	Interdisciplinary Project Work: Soil Sciences	WS	4.0	6.0
911.310	VO	Soil Microbiology	WS	1.0	1.5
911.311	UE	Methods in Soil Microbiology	SS	3.0	4.5
911.312	VO	Rhizosphere Processes and Application to Agriculture and Soil Protection	SS	2.0	3.0
911.313	VX	Soil Structure: Development, Functions and Changes in Agricultural Soils	SS	3.0	4.5
911.314	VU	Molecular Microbial Ecology of Soil	SS	2.0	3.0

W-3 Botany					
831.003	VO	Stress Physiology of Plants	SS	2.0	2.0
831.302	VU	Methods of Measuring Stress Resistance in Plants	SS	2.0	3.0
831.312	VO	Plants and their Environment	SS	2.0	3.0
831.313	VO	Water Relations of Plants	WS	2.0	3.0
831.322	VU	Indicator Values of Plants and Ecological Bioindication	WS	1.0	1.5
912.309	VS	Ecosystem Dynamics II	SS	4.0	6.0
951.321	UX	Classical and Molecular Cytogenetics for Plant Breeding	SS	2.0	3.0

W-4 Zoology					
751.311	VO	Nutrition Physiology	SS	2.0	2.0
832.304	VS	Specific Wildlife Ecology II: Habitat Suitability and Biotope Management	WS	3.0	4.5
832.327	VS	Specific Wildlife Ecology I: Behavioural and Population Ecology	WS	3.0	4.5
833.306	UE	Introduction to Entomology	SS	1.0	1.5
833.307	SE	Colloquium Zoology	WS	2.0	3.0
932.301	VO	Molecular Animal Genetics	WS	3.0	4.5
932.320	VO	Animal Physiology: Diagnosis and Clinic	WS	2.0	3.0

<i>Number</i>	<i>Type</i>	<i>Name</i>	<i>Semester</i>	<i>SST</i>	<i>ECTS</i>
W-5 Biodiversity and Nature Protection					
731.350	VO	Nature and Landscape Conservation Economics	WS	2.0	3.0
831.311	VO	Biology and Ecology of Weeds	SS	2.0	3.0
831.323	UX	Biodiversity Aspects in Agro-Ecosystems	SS	5.0	7.5
831.324	UX	Biological Monitoring Exercises	SS	1.0	1.5
831.326	UX	Evaluation of Ecosystem Functions for Nature Conservancy in Cultural Landscapes, Exercises	SS	1.0	1.5
833.300	VO	Animal Species of Conservation Concern and their Habitat Demands	SS	1.0	1.5
834.300	SE	Nature Conservation in Practice	SS	3.0	4.5
853.308	PJ	Landscape Ecology Field Course	SS	3.0	4.5
931.307	VS	Technology Assessment for Agriculture	SS	2.0	3.0
W-6 Agro-Biotechnology and Genetics					
731.305	VO	Principles of Law	WS	2.0	2.0
791.111	VO	Plant Biotechnology	WS	2.0	3.0
791.112	UE	Plant Biotechnology Practical Course	WS	3.0	4.5
932.315	VO	Reproduction Technology in Livestock	SS	2.0	3.0
954.101	UE	Laboratory Course in Molecular Biology I	WS or SS	3.0	3.0
954.300	UE	Laboratory Course in Molecular Biology II	WS or SS	3.0	4.5
954.301	VO	Genome Structure and Genome Analysis	WS	2.0	2.0
954.302	VO	Molecular Genetics of Yeasts and Fungi	WS	3.0	3.0
954.304	VO	Control of Gene Expression in Eukaryotes	SS	2.0	2.0
954.307	VO	Developmental Genetics	SS	2.0	2.0
954.313	SE	Biotechnology meets Population Genetics	SS	2.0	2.0
954.316	SE	Developmental Genetics of Plants	SS	2.0	3.0
W-7 Plant Protection					
953.310	VZ	Soil-Born Pathogens and Symbionts	SS	2.0	3.0
953.303	VO	Parasitology and Pathology of Crop Plants	SS	2.0	3.0
953.309	VU	Introduction to Plant Nematology	WS	1.0	1.5
953.312	VU	Integrated and Biological Pest Management in Horticultural Crops	WS	2.0	3.0
953.314	VX	Protection of Stored Crops	SS	2.0	3.0
953.320	VU	Biological Plant Protection	WS	2.0	4.5
953.322	VU	Plant- Virology and -Bacteriology	SS	2.0	3.0
954.309	VU	Molecular Phytopathology	SS	3.0	3.0

<i>Number</i>	<i>Type</i>	<i>Name</i>	<i>Semester</i>	<i>SST</i>	<i>ECTS</i>
W-8 Agricultural Production					
751.306	VO	Advanced Animal Nutrition	WS	4.0	6.0
931.303	SX	Agricultural Engineering in Plant Production - Seminar	SS	3.0	4.5
932.306	VO	Advanced Animal Breeding	SS	4.0	6.0
932.307	VU	Advanced Animal Husbandry	SS	4.0	6.0
951.305	VS	Field Crop Production and Products	WS	3.0	4.5
951.307	VO	Field Crop Breeding	SS	2.0	3.0
951.317	VS	Grassland Management	SS	3.0	4.5
952.306	VX	Special Vegetable-Growing	WS	2.0	3.0
952.307	VX	Special Fruit Production	WS	2.0	3.0

W-9 Supplementary courses

732.113	VO	Introduction to Environmental Policy	WS	2.0	2.0
812.320	VO	Hydrobiology II	SS	1.0	1.5
814.302	VU	Bioclimatology	WS	2.0	3.0
835.304	VU	Mathematical Modelling in Agricultural Sciences	SS	3.0	4.5

§ 6 Thesis for the Master degree

(1) The graduation paper is a scientific piece of work which serves the evidence of the students ability to work on a scientific subject autonomously and in a way that is justifiable regarding content as well as methodology (§ 51 (1) Z. 8 UG 2002). The thesis for the Master degree is an integral part of the Master degree programme Agricultural Biology. 30 ECTS are granted for the thesis for the Master degree.

(2) The scientific subject of the graduation paper has to be chosen from a subject relevant and related to the Master degree programme Agricultural Biology.

(3) The supervision and grading of the candidate's work is incumbent upon the university professor who has assigned the chosen subject for the graduation paper.

(4) The thesis for the Master degree has to be presented and defended in a public expert talk before evaluation by the supervisor. The result of this presentation has to be integrated in the grading of the Master degree thesis.

§ 7 Graduation requirements

(1) The Master degree programme Agricultural Biology is concluded upon the successful completion of the following requirements:

- positive completion of all required compulsory courses to an extent of 33 ECTS (according to § 2 (1) and § 5 (1)),

- positive completion of all required elective courses to an extent of 37 ECTS (according to § 2 (2) and § 5 (2)),
- positive completion of free elective courses to an extent of 20 ECTS,
- positive evaluation of the thesis for the Master degree and its public defence.

(2) Evaluation takes place as course exams. Course examination may be oral and / or written, as defined by the lecturer. Students are granted the right to request a different method of course examination. This can only be done in cooperation with the lecturer and by stating justified reasons.

(3) The course examination has to be in accordance with the type of course: lectures are concluded either orally or in a written, unless they are not evaluated accompanying the lecture. Courses of the types SE, VS, VSX, SX and USX can be concluded by handing in a self-composed, written seminar paper. The amount of this seminar paper has to be defined by the lecturer of the course. With all other types of courses the method of course examination will be defined individually by the lecturer.

(4) Prerequisite for admission to the course "Techniques for Plant Determination", UX, 1SST/1,5 ECTS is the positive completion of "Techniques for Plant Determination", VS, 1SST/1,5ECTS.

(5) The graduation paper is a scientific piece of work which serves the evidence of the student's ability to work on a scientific subject autonomously and in a way that is justifiable regarding content as well as methodology. (§ 51 (1) Z. 8 UG 2002).

(6) The concluded graduation paper has to be presented and defended in a public expert talk. This presentation and defence has to be organised by the supervisor of the thesis. At least one additional university lecturer with respective professional competence has to be nominated. This person also has to participate in the subsequent expert talk. The candidate has the right to suggest this person. This summoned university lecturer has to be informed on the topic of the graduation paper in advance.

(7) Courses held in foreign languages:

Students are explicitly advised to complete study-specific courses held in foreign languages to an extent of at least 6 ECTS.

§ 8 Admission to the Master degree programme

(1) The Master degree programme Agricultural Biology requires the Bachelor degree programme Agricultural Sciences at the University of Natural Resources and Life Sciences, Vienna. Graduates of the Bachelor degree programme Agricultural Sciences at the University of Natural Resources and Life Sciences, Vienna, are therefore admitted to the Master degree programme Agricultural Biology.

(2) Graduates of the Bachelor degree programme Equine Sciences at the University of Veterinary Medicine, Vienna, and the University of Natural Resources and Life Sciences, Vienna, are admitted to the Master degree programme Agricultural Biology.

(3) Graduates of Bachelor degree programmes taken from all professionally adequate fields and equal international studies are admitted to the Master degree programme Agricultural Biology. It has to be stated that knowledge in the fields of natural scientific foundation, socio-economic basics and agrarian, horticultural and market gardening production is required for graduates of other Bachelor degree programmes.

§ 9 Commencement

The Master degree programme Agricultural Biology comes in force on October 1, 2004.

§ 10 Transitional regulations

(1) Regular students, who are permitted to follow the diploma degree programme “Landwirtschaft” according to their degree course scheme on the basis of the UniStG from 1. 10. 2000, may continue to follow their degree programme.

From the effective date of the new degree programmes for Bachelor and Master degrees, students are permitted to complete their degree within the legal duration period, with the addition of one extra semester, according to § 80 b (2) UniStG. If the degree is not completed within this period, then the student will be required to follow the Bachelor degree programme for the remainder of his / her studies (An admission to the Master degree programme can only take place after the positive completion of a Bachelor degree programme, see § 3).

(2) For students, who continue their degree according to a diploma degree programme there is an equivalence list which shows which courses or groups of courses from the range of the Master degree programme of the respective diploma degree programme are equivalent to the Master degree programme. Courses of diploma degree programmes, which are no longer offered or no longer assessed have to be completed according to the equivalence list of the Master degree programme.

Equal footing in this equivalence list do not need any further confirmation. Credentials, which were issued for diploma degree programmes after the effective date of the new degree programmes for Master degree programmes count for diploma degree programmes without any further confirmation.

(3) After admission to the Master degree programme according to § 12 (7) of the Bachelor degree programme Agro Sciences (acknowledgements after switching from the diploma degree programme “Landwirtschaft”) all successfully completed exams for the third part of the diploma degree programme “Landwirtschaft” according to UniStG for subjects of the chosen Master degree programme will be accredited. This does only apply to subjects which are covered and equal; otherwise they can be claimed as optional modules for the chosen Master degree programme.