



Universität für Bodenkultur Wien

University of Natural Resources and Life Sciences, Vienna

Curriculum

for the Master Programme in

Livestock Sciences

Programme Classification No. 066 456

Effective Date: October 1st, 2019



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Curriculum of the Master Degree Programme

“Livestock Sciences”

At the University of Natural Resources and Life Sciences, Vienna

As at October 1st, 2019

§ 1 QUALIFICATION PROFILE

The Master programme in Livestock Sciences 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 Livestock Sciences 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

Building on the knowledge of Agricultural Sciences, a sound natural scientific basis as well as social sciences and economic sciences, students of this Master degree programme acquire knowledge and abilities in the field of animal husbandry sciences.

Interdisciplinary courses deepen the understanding, knowledge, abilities and varieties of methods of the students in the field of livestock breeding, feeding and husbandry. Free elective courses allow students to take initiative to enlarge their knowledge and variety of methods in the Livestock Sciences and to link gained knowledge with other agrarian fields of study such as Applied Plant Sciences, Agricultural Economy, Food Production and Distribution or Organic Farming.

After completing the Master study programme Livestock Sciences the graduates are enabled to make use of and further develop their gained professional knowledge in vocational practice as well as academic research and teaching.

The graduates are in the position to:

- think in analytical, problem-oriented, cross-linked and responsible ways,
- gain, assess and interpret information in a goal-oriented manner,
- illustrate and communicate insights in a comprehensible and critical way,
- apply the gained knowledge in a practice- and solution-oriented way,
- act in a quality-oriented, economic and environmentally-friendly way.

In addition, graduates are equipped with social competences such as personal responsibility, autonomy and the capacity for teamwork.

1b) Professional Qualifications

The acquired professional and methodological knowledge connected with social competence enables activities in various fields of work in private as well as public organisations and on local, national or international (i.e. particularly EU-) level:

- Animal production (industrial co-operations, agrarian businesses, commercial producer groups, breeding organisations),
- preliminary and downstream areas (trade, industry or other organisations in the field of agricultural economies and agricultural and food industries),
- counselling (Chambers for Agriculture, freelance counselling) and teaching (especially agrarian schools and education),
- public authorities, organisations and special interest groups in the agricultural and environment sector,
- organisations for origin and quality inspection
- research and development (universities, research centres, industry).

§ 2 ADMISSION REQUIREMENTS

(1) Graduates of the Bachelor programme in Agricultural Sciences (033 255) offered by the University of Natural Resources and Life Sciences, Vienna (BOKU), are eligible for admission with no further requirements.

(2) Graduates of the Bachelor programme in Equine Sciences (033 602) offered by the University of Veterinary Medicine, Vienna in cooperation with the University of Natural Resources and Life Sciences, Vienna (BOKU), are eligible for admission with no further requirements.

(3) For graduates of thematically related Bachelor programmes completed at other universities in Austria or abroad, mastery of the following learning outcomes is required for admission:

(3.1) Knowledge and competences in the basic subjects of agricultural sciences, i.e.: chemistry, physics, mathematics or statistics, zoology or anatomy and physiology of domestic animals, botany, microbiology, genetics and economics.

(3.2) knowledge and competences in the basic subjects of animal production, i.e.: animal breeding, animal nutrition, animal husbandry, crop production or grassland management.

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

§ 3 PROGRAMME STRUCTURE

3a) Duration, Total ECTS Credits and Programme Structure

The programme consists of courses and other requirements worth a total of 120 ECTS credits. This is equivalent to a duration of four semesters (a total of 3,000 60-minute credit hours). The programme is divided into

Compulsory courses:	33 ECTS credits
Master's Thesis:	30 ECTS credits
Elective courses:	39 ECTS credits
Free electives:	18 ECTS credits
Foreign language-taught courses – see (5):	9 ECTS credits

(1) Compulsory Courses – 33 ECTS Credits

The compulsory courses are divided into the following blocks:

P-1 Basic subjects Livestock Sciences	31 ECTS credits
P-2 Master's Thesis Seminar	2 ECTS credits

(2) Master's Thesis – 30 ECTS Credits

A Master's Thesis is a paper on a scientific topic, to be written as part of a Master degree programme. With their Master's Thesis, students demonstrate their ability to independently address a scientific topic, both thematically and methodologically (see § 7).

(3) Elective Courses – 39 ECTS Credits

Elective courses worth a total of no less than 39 ECTS credits have to be selected from the elective course blocks W-1 to W-6 and completed.

(4) Free Electives – 18 ECTS Credits

Free electives worth a total of 18 ECTS credits are required to complete the Master programme. Free electives may be selected from all courses offered by all recognized universities in Austria and abroad. It is recommended to select free electives from the courses offered in this curriculum and other agricultural sciences programmes.

(5) Foreign Language-Taught Courses – 9 ECTS Credits

Students are required to complete courses, which are related to the field of study, worth a total of 9 ECTS credits taught in a foreign language. These courses can be compulsory courses, elective courses, internships or free electives. Courses taken at international universities abroad are to be credited. General language courses (with the exception of specialised language courses) will not be considered. (General foreign language courses may be credited in the framework of free elective courses.)

(6) Limited Number of Participants in Courses

For courses with a limited number of participants the head of a course of this curriculum (UH 066 456) is authorised to first admit students enrolled in the Master programme; that

means that students enrolled in a Bachelor study programme can only be admitted to the courses if further spaces are left on the course. The admission of students enrolled in the Master study programme is conducted according to the following order of required courses by the students: compulsory course, elective course, free elective course.

3b) Three-Pillar Principle

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

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

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

§ 4 COMPULSORY COURSES

Used Abbreviations:

ECTS = European Credit Transfer System

WS = Winter semester

SS = Summer semester

Notes:

¹⁾ In English

²⁾ In English and German

³⁾ Courses not offered in the academic year 2019/20

⁴⁾ Courses only offered in uneven years (e.g. 2017/18, 2019/20, 2021/22)

⁵⁾ Courses only offered in even years (e.g. 2016/17, 2018/19, 2020/21)

The following compulsory courses are required to complete the Master programme in Live-stock Sciences:

Course Number	P-1 Basics in Livestock Sciences	Course Type	Semester	ECTS Credits
	Course Title			
932306	Advanced animal breeding	VO	SS	6
976306	Advanced animal nutrition	VO	SS	6
932332	Advanced animal husbandry	VS	SS	6
932308	Animal production systems ¹	SE	WS	6
932333	Biostatistics in livestock sciences	VU	SS	7

Course Number	P-2 Master's Thesis Seminar	Course Type	Semester	ECTS Credits
	Course Title			
930300	Master's thesis seminar	SE	WS or SS	2

§ 5 ELECTIVE COURSES

Elective courses worth a total of 39 ECTS credits are required to complete the Master programme. These can be chosen from the elective course blocks W-1 to W-6.

Course Number	W-1 Animal Breeding	Course Type	Semester	ECTS Credits
	Course Title			
932311	Quantitative animal genetics ¹	VO	WS	6
932334	Molecular animal genetics ¹	VO	WS	3
932312	Genetics of diversity ¹	VO	WS	3
932335	Designing breeding programs ¹	VO	WS	3
932314	Estimation of breeding values in cattle ⁵	VO	SS	3
932315	Reproduction technology in livestock	VO	WS	3

Course Number	W-2 Animal Nutrition	Course Type	Semester	ECTS Credits
	Course Title			
976316	Feed science and technology	VO	SS	3
976317	Practical course (lab) in animal nutrition	UE	WS or SS	5
976303	Advanced ruminant nutrition	VO	WS	3
932331	Grassland based cattle production systems	VO	WS	3
976304	Advanced nutrition of monogastric livestock	VO	SS	3
976310	Metabolism physiology	VO	SS	3
976305	Nutrition of pet animals	VO	WS	3

Course Number	W-3 Animal Husbandry	Course Type	Semester	ECTS Credits
	Course Title			
932336	Advanced livestock ethology	VU	WS	3
932337	Animal welfare assessment	VU	WS	3
932318	Animal hygiene - ruminants	VO	WS	3
932319	Animal hygiene - pigs	VO	SS	3
932320	Applied animal physiology	VU	SS	3
932303	Animal health care in organic agriculture	VS	SS	3
932338	Animal protection in livestock husbandry	VS	WS	3

Course Number	W-4 Complementary Courses	Course Type	Semester	ECTS Credits
	Course Title			
932328	Excursion animal production	EX	SS	2
932322	Small ruminant science	VO	SS	3

932323	Poultry science ⁴	VO	WS	3
932330	Horse husbandry ⁴	VO	SS	3
932305	Beekeeping	VX	SS	3
951328	Grassland management	VS	SS	4
951318	Manuring and nutrient fluxes in grassland	VO	WS	3
932326	Alpine farming	VO	WS	3
932324	Animal husbandry in tropical and subtropical regions ¹	VO	SS	3
932329	Sustainability of livestock production systems	VS	WS	3
835305	Mathematical modelling in life sciences	VU	SS	3

Course Number	W-5 Animal Products	Course Type	Semester	ECTS Credits
	Course Title			
976319	Quality assessment of animal products	VO	WS	2
976320	Quality assessment of animal products	UE	WS or SS	2
754355	Milk analysis	UE	SS	2
752336	Dairy technology	VO	SS	2
754357	Practical work in dairying	UE	SS	2
976318	Technology of meat production	VO	SS	2

Course Number	W-6 Agricultural Engineering	Course Type	Semester	ECTS Credits
	Course Title			
931319	Seminar on animal husbandry systems	VS	SS	4
931305	Post-harvest technology ¹	VO	WS	3
931301	Mechanisation on grassland	VO	WS	3
931302	Climate engineering	VO	WS	3
931314	GPS-based agriculture	VX	SS	3

§6 FREE ELECTIVES

Free electives worth a total of 18 ECTS credits are required to complete the Master programme in Livestock Sciences. 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.

Depending on personal interests and occupational aims, it is recommended that students take the initiative to select free electives from the courses offered in this curriculum and other agricultural sciences programmes at the University of Natural Resources and Life Sciences, Vienna.

§ 7 MASTER'S THESIS

A Master's Thesis is a paper on a scientific topic, to be written as part of the Master degree programme Livestock Sciences (Exception see Charter of the University of Natural Resources and Life Sciences, Vienna, Part III – Teaching, § 30 para. 9). The thesis is worth a total of 30 ECTS credits. With their Master's Thesis, students demonstrate their ability to independently address a scientific topic, both thematically and methodologically (§ 51 [8] UG 2002 BGBl. I no. 81/2009).

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

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

§ 8 COMPLETION OF THE MASTER PROGRAMME

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

§ 9 ACADEMIC DEGREE

Graduates of the Master programme in Livestock Sciences are awarded the academic title *Diplom-Ingenieur* (m) or *Diplom-Ingenieurin* (f), abbreviated as Dipl.-Ing./ Dipl.-Ing.ⁱⁿ or DI/DIⁱⁿ.

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

§ 10 EXAMINATION REGULATIONS

(1) The Master programme in Livestock Sciences has been completed successfully when the following requirements (corresponds to components in [7] below) have been met:

- positive completion of compulsory courses worth a total of 33 ECTS credits (§ 4)
- positive completion of elective courses worth a total of 39 ECTS credits (§ 5)
- positive completion of free electives worth a total of 18 ECTS credits (§ 6)

- a positive grade on the Master's Thesis and the defence examination.

(2) Student evaluation takes the form of course 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.

(3) The choice of examination method shall be based on the type of course: Lectures shall conclude with a written and/or oral examination, if continuous assessment of student performance is not applied. Seminars and project-based courses can be evaluated based on independently written papers, length and contents of which are determined by the course instructor. For all other course types, the examination type is at the instructor's discretion.

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

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

The comprehensive grade is calculated as follows:

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

(6) A comprehensive evaluation of the student's performance on the entire programme shall be assigned. A comprehensive evaluation of "passed" means that each individual component of the programme was completed successfully. If individual components of the programme have not been successfully completed, the comprehensive evaluation is "failed". A comprehensive evaluation of "passed with honours" is granted if the student has received no grade worse than a 2 (good) on all individual components, and if at least 50% of the individual components were graded with 1 (excellent).

§ 11 TRANSITIONAL PROVISIONS

Students who have not completed the formerly effective Master's curriculum in Livestock Sciences (UH 066 456) when this new Master's curriculum comes into force are transferred to the currently valid one.

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

The compulsory completion of foreign language courses applies for students who began their studies under the new curriculum on October 1st, 2013, or after, or switched to this curriculum after the transitional period.

§ 12 EFFECTIVE DATE

This curriculum for the Master programme in Livestock Sciences shall take effect on October 1st, 2019.

ANNEX A TYPES OF COURSES

The following types of courses are available:

Lecture (VO)

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

Lab Course (UE)

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

Practical Course (PR)

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

Compulsory Internship Seminar (PP)

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

Seminar (SE)

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

Field Trips (EX)

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

Master's Thesis Seminar (MA)

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

Mixed-Type Courses:

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

Project Course (PJ)

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

Lecture /Seminar (VS)

Lecture/Lab (VU)

Lecture/Field Trip (VX)

Seminar/Field Trip (SX)

Lab/Seminar (US)

Lab/Field Trip (UX)