Swedish University of Agricultural Sciences

Programme syllabus

European Master in Animal Biodiversity and Genomics

Europeisk master i djurbiodiversitet och genomik

120.0 hp

Programme code: VM010

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Programme board

The programme board for education in veterinary medicine and animal science

SLU ID

SLU.ua.2025.3.1.1-1347

Entry requirements

European Master in Animal Biodiversity and Genomics (EMABG) is an Erasmus Mundus programme which is organised in cooperation by a consortium of European universities. General entry requirements must be met in order to be admitted to the programme: first-cycle qualification comprising at least 180 credits in animal science or equivalent qualification in one of the following disciplines: agricultural science, veterinary medicine, zoology, botany, or microbiology, as well as first-cycle knowledge in genetics and animal breeding.

In addition, knowledge equivalent to the course English 6 from a Swedish upper secondary school is required. This requirement is fulfilled by those who have an undergraduate degree from a Swedish university comprising 180 credits. For applicants from Nordic countries and some English-speaking countries, special rules apply.

For admission to the courses included in the programme, the specific entry requirements stipulated in each individual course syllabus must be fulfilled.

Admission to the master programme EMABG requires that the student applies and is admitted to the programme through the EMABG consortium. For more information see www.emabg.eu

Objectives

General outcomes

The general learning outcomes for first- and second-cycle courses and programmes are specified in the Higher Education Act (Chapter 1, Sections 8–9).

Qualitative targets

The Annex to the Ordinance for the Swedish University of Agricultural Sciences stipulates that for the Degree of Master, the student shall have:

Knowledge and understanding

For a Degree of Master (120 credits) the student shall have:

- demonstrated knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrated specialised methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master (120 credits) the student shall have:

- demonstrated the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
- demonstrated the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake specialised tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work
- demonstrated the ability in speech and writing both nationally and internationally to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrated the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a Degree of Master (120 credits) the student shall have:

- demonstrated the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical considerations and also to demonstrate awareness of ethical aspects of research and development work
- demonstrated insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrated the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Independent project (degree project)

For a master's degree, the student must, within the course requirements, have completed an independent project (degree project) of at least 30 credits in the main field of study.

Degree

Degree awarded on completion of the programme

The EMABG master programme leads to a Degree of Master of Science in Bioinformatics or, alternatively a Degree of Master of Science in Animal Science, which is a general qualification.

Other degrees may be awarded, provided that the requirements for the degree are fulfilled. See the qualification requirements and SLU's system of qualifications.

Students who fulfil the qualification requirements will be provided with a degree certificate upon request. The degree certificate for a degree within the main field of study in bioinformatics will specify the qualification as Degree of Master of Science with a major in Bioinformatics (120 credits) or, alternatively within the main field of study in animal science as Degree of Master of Science with a major in Animal Science.

In addition to a degree awarded from SLU, the programme provides an opportunity to apply for a degree (double degree) at one of the partner universities.

Degree requirements

A Degree of Master of Science with a major in Bioinformatics or, alternatively a major in Animal Science is obtained when the student has a full course portfolio of 120 credits, of which at least 90 credits are second-cycle studies with the following requirements:

- at least 30 credits of courses with specialised study in the main field of study (A1N; A1F)
- at least 30 credits of degree project for second-cycle studies in the main field of study (A2E)

In addition, the prior award of a Degree of Bachelor, professional or vocational qualification of at least l80 credits or a corresponding qualification from abroad is required.

Content

Programme description

The programme aims to provide the student with profiled and advanced knowledge of the main fields of study, bioinformatics or animal science. The programme has a scientific basis with close ties to SLU's research and society at large. Various perspectives are used to approach topical issues in bioinformatics or animal science.

The programme's content has been designed to ensure students are able to practise their skills in critical thinking, written and oral communication, information literacy, working both independently and in groups and the ability to identify and reflect upon relevant questions.

Teaching methods aim to stimulate lifelong learning, with student-centered learning at the heart of the programme. The programme begins with a joint introduction at one of the partner universities, providing a broad overview of the subject field and the scientific methods used in animal science as well as in-depth knowledge in genetics. The range of courses at SLU provides an opportunity to specialise in bioinformatics with a focus on biodiversity and genomics or, to specialise in animal science with focus on genetics and animal breeding.

At the end of the programme, students are able to practise the specific skills in a research environment necessary for conducting a research project. The programme concludes with an independent project worth 30 credits that enables students to apply their acquired knowledge and prepare themselves for continuing academic studies or a career in the private or public sector.

In accordance with the SLU guidelines for equal opportunities, a well-functioning study environment is characterised by openness, equality and inclusiveness. This promotes a climate that draws upon the diverse backgrounds, lives, and skills of students and staff. SLU works actively to integrate sustainability issues in all of its degree programmes. The programme's close ties to current research and society at large provides students with the chance to develop the knowledge they need to reflect upon and work with various sustainability aspects within bioinformatics or animal science.

The programme is taught in English.

Courses

Year 1 Bioinformatics

Courses at a partner university

Year 1 Animal Science

Courses at a partner university

Designing breeding programmes, 15 credits, HV, A1N

Animal genetics - health, behaviour and welfare, 15 credits, HV, BI, A1N

Year 2 Bioinformatics

Genome analysis, 15 credits, BK, A1N

Bioinformatics, 15 credits, BK, A1N

Independent project in bioinformatics, 30 credits, BK, A2E

Year 2 Animal Science

Genome analysis, 15 credits, BK, A1N

Bioinformatics, 15 credits, BK, A1N

Independent project in animal science, 30 credits, HV, A2E

The courses offered may change during the programme. Decisions on the courses offered are taken well in advance of the next academic year.

Each course on the programme has its own syllabus that describes the course content and other specifics. Detailed information on when the courses are offered is available on the SLU student web.

During certain study periods (parts of the semester), SLU offers several programme courses that the student can choose from. The student is guaranteed a place **on one of these** courses provided that the entry requirements are fulfilled and that the student has registered on time.

Additional information about the programme

General regulations for first- and second-cycle courses and programmes

For more information on semester dates, examination, credit transfer and admissions to the latter part of programmes, see the Education Planning and Administration Handbook on the SLU student web.

Possibilities for further study.

Students who complete the master programme and are awarded a degree have the possibility to continue their studies at doctoral level