

Qualification profile BSc Agricultural Sciences

Introduction

The objective of the Bachelor's degree programme in Agricultural Sciences is to provide a broad knowledge of various agricultural disciplines, which are grounded in the sciences and social sciences. During the programme acquired knowledge is deepened by practice via excursions and an internship in agriculture. The Bachelor's degree entitles holders to enter the Master's degree programme and to intra- and interuniversity mobility. Professional qualification is only complete when the Master's degree is obtained.

Domain-specific knowledge and understanding

Graduates with a Bachelor's degree in Agricultural Sciences

- have a good grounding in mathematics, chemistry, biology, physics, computer science and environmental systems;
- have basic knowledge of economics, political science and law;
- have mastered mathematical and statistical analysis and optimisation procedures;
- are familiar with basic laboratory techniques;
- know the basics of agricultural systems and the farming production systems and methods in Switzerland and other countries/regions;
- possess specialist knowledge in the following areas:
 - Sustainable production of safe and high-quality food
 - Crops and fodder plants: cultivation, plant nutrition, crop protection, genetics
 - Livestock: Genetics, nutrition, physiology, behaviour, husbandry, health
 - Agricultural economics: Agricultural economics, market policy, management, marketing.

Skills

a) Analytical skills

Graduates with a Bachelor's degree in Agricultural Sciences

- can analyse, describe, understand and explain agricultural ecosystems in Switzerland and other countries/regions;
- are able to recognise agricultural issues at the industrial and regional level;
- can analyse and describe complex ecological, social, economic and ethical issues of the world food system.

b) Development skills

Graduates with a Bachelor's degree in Agricultural Sciences

- can develop solutions to agricultural problems at the industrial and regional level;
- are able to implement laboratory techniques to address agricultural issues;
- can develop application-oriented solutions for safe and sustainable agricultural and food production of the world food system;
- are able to address agricultural issues independently and present results according to scientific conventions in the form of reports or talks.

Personal and social competences

Graduates with a Bachelor's degree in Agricultural Sciences

- cultivate a critical approach to information, and are able to summarise and link significant points from various sources;
- know the basics of project and teamwork and are able to work in teams;
- can apply their broad theoretical knowledge to address practical issues;
- are able to present their knowledge in written and spoken form.

Qualification profile MSc Agricultural Sciences

Introduction

The Master's degree programme in Agricultural Sciences provides students with in-depth knowledge of agricultural sciences with a focus on sustainable global food production and sustainable use of natural resources. It introduces students to relevant basic and applied research questions and results. Students experience the interplay between globalisation and regional identity, competitiveness and sustainability, and between the interests of the economy and society. They become important problem-solvers for the coming decades who are able to analyse the diverse components of the world food system and develop tailored solutions for both Switzerland and regions around the world. Graduates of the programme are equipped with the high-level theoretical and methodological capabilities and social competences required to assume a demanding professional role or to embark on an academic career.

Domain-specific knowledge and understanding

Graduates with a Master's degree in Agricultural Sciences

- possess process and system-oriented knowledge in one of the three specialisations Plant Sciences, Animal Sciences and Agricultural Economics;
- have detailed knowledge of agriculture, agroecosystems and world food systems and the associated ecological, social and cultural dimensions;
- are able to apply their broad basic understanding and specialist knowledge across a wide, networked professional environment.

Skills

a) Analytical skills

Graduates with a Master's degree in Agricultural Sciences

- are familiar with current subject-specific methods of data collection, analysis and modelling, and know how to approach and apply these and the respective results critically;
- are able to analyse the complex ecological, social, economic and ethical problems of the world food system.

b) Development skills

Graduates with a Master's degree in Agricultural Sciences

- are able to deploy appropriate methods to recognise future problems in agricultural systems and develop strategies for their solution;
- are able to reflect critically on established solutions, adapt them and help to implement them;
- are in a position to generate new specialist knowledge and are familiar with various methods of knowledge transfer.

Personal and social competences

Graduates with a Master's degree in Agricultural Sciences

- possess very good communication, discussion and management skills;
- operate successfully both alone and in a team;
- can operate at various levels to address trans- and interdisciplinary issues;
- are able to take decisions responsibly and to implement them;
- can present complex material clearly to both specialists and generalists and discuss it with them;
- are able to transfer knowledge from a local to a global context and back with an eye to ethical responsibility and an economic approach.