

Branch: Agriculture



Code: AGSYSC

Option: Agricultural Systems Science

Level: Master

Prerequisites:

Opportunities:

There are many professional opportunities:

Research activities (university and similar, departmental and company research)

Management positions in agro-industrial companies, ministries and/or agricultural administration.

Advisory activities, e.g. in associations, national and international organizations

Environmental and sustainability management (e.g. development and implementation of environmental and sustainability strategies in agribusinesses).

Description:

In the Master of Agricultural Systems Science, students deal with agricultural production systems, their biological, technical and economic foundations and their integration into agricultural ecosystems. The focus is on the scientific description, analysis and evaluation of agricultural systems. What is the focus of this study program?

The Master's program deals with agricultural production systems (crop and animal production systems), i.e. the interactions between soils, crops, livestock, environment and society. This degree program thus responds to future challenges in the fields of food production, renewable energy as well as raw

materials, environment and climate. The program trains agronomists who understand the societal and global challenges of a sustainable agricultural economy and who have a broad knowledge of the biological and technological components of agricultural production. This enables them to evaluate existing and new technologies in the context of agricultural production systems and agro-ecosystems and to develop solutions to problems.

In contrast to a focused study of agricultural science, agricultural systems science is less concerned with individual subsystems and components such as crop and livestock production systems, but rather with interactions at the farm level (e.g. nutrient cycles) and interactions at the agricultural landscape level (e.g. landscape water balance, erosion processes, biodiversity and regulation). A key objective of the course is to develop a deeper understanding of the processes that occur in agricultural systems, their influencing factors and the interactions between the system components of soil, plants, animals and humans.

The MSc Agricultural Systems Science program emphasizes the interdisciplinary nature of agricultural science: it is both problem-oriented and research-oriented. Thus, this MSc program meets the needs of students as well as societal goals and high scientific standards.

Quality and competences:

Graduates of the MSc Agricultural Systems Science program have a sound knowledge of the biological, scientific-technical and socio-economic basis of agricultural production and the sustainable use of natural inputs in the production of biogenic food and feedstock's. They have a good knowledge of the components of agricultural production systems and their interactions with the environment and society. Due to the high degree of freedom of choice, graduates demonstrate individual and interdisciplinary expertise and work in a problem-solving manner.

Graduates....

- are able to recognize conflicts of use, develop solution approaches and strategies to overcome these conflicts.

- are aware of the changing social demands on primary crop and livestock production, can assess them and take them into account in the design of agricultural systems.

- can analyze and manage agro-ecosystems in terms of material cycles, resource efficiency and environmental protection.

- are able to design and work independently on research projects.

are able to apply appropriate methods of statistical analysis and critical evaluation of complex data sets.

are able to analyze concrete situations of primary production of biogenic raw materials in the overall biological, scientific-technical and socio-economic context and to evaluate them from an ecological and economic point of view.

are able to recognize and evaluate the potential of agricultural innovations for the sustainable primary production of plant and animal foods.

are able to use the potential of agricultural innovations for further development or redesign of agricultural production systems.

Graduates are thus able to assess and steer future agricultural systems and develop them within the framework of the requirements of society as a whole.