

Branch: Life Science



Code: LISCBI

Option: Biology

Level: Bachelor

Prerequisites: Scientific baccalaureate or equivalent

Opportunities:

Work on research projects in industry and public research institutions, qualification through training programs, office work in specialist departments, scientific journalism. In general, however, the aim is to pursue a scientific career in the form of a master's degree and often later a doctorate at universities in Germany and abroad. This then opens up a very broad professional spectrum and corresponding opportunities for management positions.

Description

Biology is at the heart of the life sciences, which are described as the cutting-edge sciences of the 21st century. Biology is the study of living systems and integrates physical and chemical processes into a highly complex dynamic system, from the biochemistry of the living cell to organs, organisms and ecosystems.

The program offers a broad fundamental orientation to the life sciences without being limited to specific application aspects. From the mathematical, physical and chemical foundations taught, an introduction is given to all relevant biological disciplines, as well as to methodological approaches and technological advances in this field. In the following semesters, the integrative view is forced and, at the same time, the differentiation of the students' personal

strengths is made possible through elective courses. The ability to analyze and abstract complex biological systems and their interrelationships and to develop questions and solution approaches is taught.

The curriculum thus represents a targeted counter-development of early specialization in order to generate graduates of the future who are well positioned: They are qualified to work in a wide variety of research projects and always bring the perspective of the systems view.

As the core science of molecular and systemic understanding of biological processes, the biology program trains specialists for research-oriented or applied life science disciplines and is their main driver for progress. With its broad approach to the study of biological systems, it is therefore also the generating center of all central directions of bioscientific research, from which new special areas and fields of application will continue to develop.

Quality and competences:

The aim of the study program is to acquire a comprehensive understanding of systems - from the biomolecule to the ecosystem - and extensive methodological skills. Research-oriented, you will be able to analyze and abstract complex biological systems and their interrelationships and develop questions and solution approaches.

As a graduate of the Bachelor program in Life Science Biology, you will have a thorough knowledge of the scientific foundations of chemistry (AC, OC, PC), physics and mathematics. You will be able to relate this knowledge to bioscientific content and questions and to analyze interrelationships at different scales. They can formulate concrete technical questions, evaluate the experimental and methodological approach and implement it in the laboratory or in the field, evaluate it scientifically and interpret the results. You think and work in a networked and analytical way, you work in a problem-solving way and you use your knowledge of methods in a goal-oriented way. Thanks to the great freedom of choice, you have individual and interdisciplinary expertise. You have learned to take a stand on social and ethical issues in the life sciences.

In addition, the experience gained in the theoretical modules will enable you to solve concrete technical problems in laboratory practice. Your broad methodological understanding and in-depth knowledge of cell biology, genetics, biochemistry and bioinformatics will serve as a basis. You relate to more complex issues, for example plant, human or animal physiology or the systems approach to ecology.

Graduates...

Have practical skills in biochemistry / bioanalysis, zoology, botany, microbiology and genetics.

Can apply various scientific methods to abstract and analyze biological problems in their basic structure.

Know and understand the control processes and feedbacks from the genetic to the molecular and physiological levels of the organism.

Know the practical arsenal of biological science methods and can develop appropriate experimental approaches to the study of biological phenomena.