Biotechnology

Learning objectives and graduate profile

The study programme encourages the principles of scientific work, its ethical and social aspects, scientific problem formulation, presentation and publication of scientific results, provides the necessary knowledge for the development of the scientific and study field, emphasises the research - development - application link and evaluation of own contribution to practice. Also, the creative activity of the graduate in the field of biotechnology. The graduate has an active knowledge of a foreign language (English), is able to work in a team, to forecast developments in his/her field. In the course of his studies he deepens his knowledge of biotechnology, biology and analytical chemistry, acquires the principles of scientific work, forms of processing and presentation of results. He acquires experimental skills and experience in working with modern instruments. They will learn to search, process and interpret information from available sources (scientific databases, scientific publications). Can process, publish and present the results obtained at scientific events. Students are also involved in solving scientific projects, thus developing and deepening the principles of scientific work, solving complex problems, analytical and synthetic thinking, sense of teamwork.

The result of individual subjects is a comprehensive dissertation within four, in the case of external study five, years, processed in the scope defined in the Act on Higher Education of the Ministry of Education, Science, Research and Sport of the Slovak Republic. The result of education is competence, i.e. the student acquires the ability to:

- identify a problem for finding a scientific solution
- propose a scientific hypothesis,
- verify it with a suitably set up and designed experiment or set of experiments
- evaluate the results and process them in the form of a dissertation
- solve problems during the experimental work of the dissertation
- propose appropriate procedures for modifying the experiment
- work independently in the laboratory, but also work in a team
- communicate with experts within the framework of his/her dissertation topic, as well as related topics
- present his/her results to experts in the form of presentations and discussions
- publish results in the form of publications in scientific journals of high quality and impact.

Graduates of doctoral studies

Graduates of doctoral studies are able to investigate biomolecules and biological systems, as well as to use them practically, they are able to independently manage individual operations related to their targeted use in the agro-food, pharmaceutical-medical and chemical-environmental field, as well as in the field of industrial use of renewable raw materials, have sufficient theoretical knowledge and practical experience necessary to carry out laboratory as well as production activities and to evaluate the data obtained and are able to communicate with an equivalent level of management, and also have knowledge of the economic, legal, ethical and environmental aspects of biotechnology, which enables them to apply themselves at the middle level of functional activities in the scientific-research, as well as in the production-business sphere.

Recommended study plan (part-time)

In case of interest, it is possible to look at the profile subjects of the study programme and find out what knowledge, skills or competences the student will acquire after their successful completion, or to look at the detailed description of the study programme in part-time form.

Requirements for applicants, method of selection and recommended personal qualities

Number of students admitted to the study programme: 4 (full-time)/ 5 (part-time)

Requirements for applicants and the method of their selection are specified in §56 to 58 of Act no. 131/2002 Coll. on Higher Education Institutions, they are regulated in more detail by the UCM Study Regulations in Trnava and the UCM Admission Procedure Regulations.

The basic condition for admission to doctoral studies is a second-degree university degree (Section 56(3) of Act No. 131/2002 Coll. on Higher Education and on Amendments and Additions to Certain Acts). Graduates of domestic or foreign universities may apply for admission if they have completed a master's degree or an engineering degree. The admission procedure at the FNS UCM is carried out in accordance with Act No 131/2002 Coll. on Higher Education and on Amendments and Additions to Certain Acts, Sections 56 to 58. The admission procedure enables an applicant who demonstrates fulfilment of the specified admission conditions to become a student of the chosen study programme. The student applies for one of the dissertation topics and develops a framework project on the topic. An applicant who fails to demonstrate fulfilment of the basic conditions for admission to the study at the time of verification of fulfilment of the conditions for admission may be admitted to the study conditionally, provided that he or she is obliged to demonstrate fulfilment of the basic conditions for admission to the study no later than on the date set for enrolment in the study. Admission to doctoral studies will take place in the form of an admission interview, at which the applicant will present his/her motives, the project on the topic of the doctoral thesis and the prerequisites for the studies, as well as his/her knowledge of a foreign language.

Graduate employment and occupations that a graduate of the SP can pursue

Graduates of the Biotechnology study programme can find employment in a wide range of workplaces with a biological and chemical focus in research teams, as well as in independent work with a research and technical focus (SAS, universities, departments of health, agriculture and forestry, food industry, environment, etc.), as well as

directly in production practice. They are prepared for the requirements of specialised institutions requiring field work, especially in workplaces dedicated to modern biotechnology, as well as environmentally oriented workplaces, and they will also find employment in institutions of state and local government. Graduates also have a wide range of applications in private companies and industrial enterprises with an innovative-technological focus in the field of biotechnology, but also in related areas. The professions in which graduates of the doctoral degree programme in Biotechnology can find employment are, for example, scientist, laboratory diagnostician, laboratory technician in various fields (biochemistry, microbiology, etc.), product specialist, chemical production operator, raw material reception worker, fermenter/distiller, production technician, quality controller, research and development specialist, technologist, agronomist, sanitarian, and hygienist.

Teaching and learning rules
The rules of teaching are clearly defined in the information sheets of individual courses as well as in the UCM Study Regulations, which govern the FNS.

Assessment procedures and criteria
Lists of information sheets

Conditions for completion of the study programme
The PhD. degree is conditional upon the acquisition of at least 240 credits and the completion of the dissertation defence.

Success rate
Without graduates

Further detailed information about the study programme is available at **vsk.ucm.sk** or on the department's website.

Person responsible for the quality of the study programme
prof. RNDr. Ján Kraic, PhD.

Persons responsible for profile subjects
doc. RNDr. Miroslav Ondrejovič, PhD.
doc. Ing. Jana Moravčíková, PhD.
doc. Mgr. Daniel Mihálik, PhD.
doc. RNDr. Michaela Havrlentová, PhD..