Molecular biology

Learning objectives and graduate profile
The study programme encourages creative activity of the graduate in the field of molecular biology, applied biology and other biological disciplines. A profound theoretical knowledge as well as knowledge of scientific methodology and the processing of scientific results are important. 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.
The aim of studying in the PhD programme in Molecular Biology is the development of intellectual and creative abilities, as well as practical skills in the field of molecular biology. Completion of individual courses results in a comprehensive dissertation developed over four years within the scope defined in the Higher Education Act 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
- to identify a problem in order to find a scientific solution
- propose a scientific hypothesis
- verify the hypothesis with appropriately set up experiments
- evaluate the results and process them in the form of a dissertation
- solve problems arising during the experimental part 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, but also on related topics
- present their 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 the doctoral study programme Molecular Biology (PhD.) have an active command of the English language, are able to work independently and creatively in various areas of biology as well as in borderline disciplines, and are proficient in scientific approaches and research methodology in selected application areas of applied biology using the most modern methods of molecular biology and genetics. He/she is also competent to design, manage and objectively evaluate problem-oriented experiments, focused on serious problems of contemporary social practice, and performs activities in various other areas of social practice, in quality assurance and management, in environmental monitoring, in pharmaceutics, in clinical biochemistry, in molecular medicine, in food science, and elsewhere. The graduate has basic management skills, focused on the application of applied biology in practice, can lead a research team, plan team tasks, and also has knowledge of relevant environmental, economic, legal and ethical aspects, and on the basis of the acquired knowledge is able to teach specialized biology subjects at university.
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
After graduation, the graduate of the study programme Molecular Biology can seek employment in a wide range of workplaces with biological, microbiological and chemical focus in research teams, as well as in independent work with a research and technical focus (SAV, universities, health departments, agriculture and forestry, food industry, environment, etc.). They are ready to meet the requirements of specialized institutions requiring field work, especially at workplaces dedicated to modern technologies (recombinant DNA technologies), biological,

microbiological as well as environmentally-ecologically oriented workplaces, and they will also be employed in institutions of state and local government and in private companies with a research and technology orientation.
Graduates are employed throughout Slovakia and abroad, e.g. Biomedical Centre of the Slovak Academy of Sciences, Laboratory of Environmental and Food Microbiology, Institute of Biomedical Sciences, Bratislava; Erba Lachema s.r.o, Brno, GSK Group (Levice/Bratislava); VWR International, s.r.o. (Slovakia); University of St. Cyril and Methodius in Trnava, National Research Centre for Pneumococcal Diseases, UniLabs, Laboratory of Clinical Microbiology, and others.
The professions for which a PhD graduate can apply are for example: scientific researcher, molecular biologist, geneticist, laboratory diagnostician, product specialist, chemical production operator, production technician, quality controller, research and development specialist or even sanitation and hygiene specialist.

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. Juraj Krajčovič, CSc.

Persons responsible for profile subjects
prof. Ing. Štefan Janeček, DrSc.
doc. RNDr. Ľubica Uváčková, PhD.
Ing. Miroslav Glasa, DrSc., funkčné miesto docent
doc. Mgr. Ildikó Matušíková, PhD.