DOCUMENT

Study programme	MB-DoD15 - Molecular Biology
Study	Grade of study - III. - doctoral, study form - full time, study type - Single degree study
Document type:	Description of the study programme
The name of the university	University of Ss. Cyril and Methodius in Trnava
The seat of the university	Nám. J. Herdu 2, 917 01 Trnava
The name of the faculty	Faculty of Natural Sciences
The seat of the faculty	Nám. J. Herdu 2, 917 01 Trnava

Institution body for approving the study programme:

The Board for Internal System of Quality Assurance at UCM

Date of the study programme approval or the study programme modification:

21.08.2013

Date of the latest change in the study programme description:

02.06.2016

Reference to the assessment report of the application for accreditation of the study programme under § 30 of Act no. 269/2018 Coll.:

programme under § 30 of Act no. 269/2018 Coll

1. - Basic information about the study programme

a) - Name of the study program and its number according to the register of study programmes.

Molecular biology 100717

b) - Degree of higher education and ISCED-F education degree code.

1 S 864

c) - Place(s) of delivery of the study programme.

Trnava

d) - Name and number of the field of study in which higher education is obtained by completing the study programme, or a combination of two fields of study in which higher education is obtained by completing the study programme, ISCED-F codes of the field/fields.

1. Biology - 0511

e) - Type of the study programme: academically oriented, professionally oriented; translation, translation combination study programme (listing the specializations); teaching, teaching combination study programme (listing the specializations); artistic, engineering, doctoral, preparation for regulated profession, joint study programme, interdisciplinary studies.

Academic-oriented learning

Awarded academic degree after the name

PhD.

g) - Form of study.

full time

h) - In the case of joint study programmes, cooperating institutions and the range of study obligations the student fulfills at each of the given institutions (§ 54a of the Act on Higher Education Institutions).

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i) - Language or languages in which the study programme is delivered.

English language Slovak language

j) - Standard length of the study expressed in academic years.

4

k) - Capacity of the study programme (planned number of students), the actual number of applicants and students.

Planed number of students 3 Actual academic year: 0

2. - Graduate profile and learning objectives

a) - The institution defines the learning objectives of the study programme such as student's abilities at the time of completion of the programme and the main learning outcomes.

The study programme stimulates the graduate’s scientific and creative activity in the field of molecular biology, applied biology, and other biological disciplines. Significant emphasis is placed on deep theoretical knowledge as well as knowledge of scientific methodology and the processing of scientific results.
The graduate actively masters a foreign language (English), is able to work in a team, and is capable of predicting developments within their field of study.

- Independent Study of Scientific Literature According to the Supervisor’s Recommendation – learning outcome of the *skill* type
- Methods of Molecular Biology – learning outcome of the *knowledge* type
- Genomics for Doctoral Students – learning outcome of the *knowledge* type
- Proteomics for Doctoral Students – learning outcome of the *knowledge* type
- Molecular Biology for Doctoral Students – learning outcome of the *knowledge* type
- Functional Analysis of Proteins and Modelling – learning outcome of the *knowledge* type
- Selected Chapters in Plant Stress Physiology and Molecular Biology – learning outcome of the *knowledge* type
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q1 according to JCR IF – learning outcome of the *competence* type
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q1 according to JCR IF – learning outcome of the *competence* type
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q2 according to JCR IF – learning outcome of the *competence* type
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q2 according to JCR IF – learning outcome of the *competence* type
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q3 according to JCR IF – learning outcome of the *competence* type
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q3 according to JCR IF – learning outcome of the *competence* type
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q4 according to JCR IF – learning outcome of the *competence* type
- Publication in a scientific journal indexed in the Web of Science or Scopus databases without classification in Q1–Q4 according to JCR IF – learning outcome of the *competence* type

Annex 13 – Educational Objectives and Learning Outcomes of the PhD Study Programme Molecular Biology (full-time form)

b) - The institution indicates the professions for which the graduate is prepared at the time of completion and the potential of the study programme from the point of view of graduate's employability.

The graduate of the doctoral study program Molecular Biology (PhD.)

- actively speaks English
- is able to work independently and creatively scientifically in various fields of biology, as well as in frontier disciplines
- masters scientific approaches and research methodology in selected application areas of applied biology using the most modern methods of molecular biology and genetics.
- is also able to design, manage and objectively evaluate problem-oriented experiments, focused on serious problems of current social practice.
- also performs activities in various other areas of social practice, in quality assurance and management, in environmental monitoring, in pharmaceutical, clinical biochemistry, molecular medicine, food and elsewhere.
- has basic managerial skills, focused on the application of applied biology in practice, is able to lead a research team, plan team tasks and also has knowledge of relevant environmental, economic, legal and ethical aspects.
- on the basis of the acquired knowledge he / she is able to teach specialized biological subjects at the university.

The graduate of the study program 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 research and technical focus (SAS, universities, health, agriculture and forestry, food industry, environment, etc.). They are ready to meet the requirements of specialized institutions requiring field work, especially in workplaces dedicated to modern technologies (recombinant DNA technologies), microbiological and environmental-ecologically oriented workplaces, and they can also be used in state and local government institutions and private companies with research and technology orientation.

Occupations:

- Researcher, scientist
- Molecular biologist,
- Genetics,
- laboratory diagnostician,
- product specialist,
- chemical production operator,
- production technician,
- quality controller,
- research and development specialist,
- sanitation and hygiene specialist

c) - Relevant external stakeholders who have provided the statement or a favorable opinion on the compliance of the acquired qualification with the sector-specific requirements for the profession.

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3. - Employability

a) - Evaluation of the study programme graduates employability.

The graduates of the Molecular Biology are employed throughout Slovakia and abroad,

- Biomedical Research Center of the Slovak Academy of Sciences,
- Laboratory of Environmental and Food Microbiology SAS Bratislava,
- Alpha medical, Ltd. (Slovakia), Erba Lachema s.r.o, Brno,
- GSK Group (Levice / Bratislava),
- VWR International, Ltd. (Slovakia),
- University of Ss. Cyril and Methodius in Trnava,
- Regional Authority of Public Health Banska Bystrica.

b) - If applicable, indicate the successful graduates of the study programme.

https://fpv.ucm.sk/absolvent/absolvent.html

c) - Evaluation of the study programme quality by employers (feedback).

Annex 04 – Report on the Evaluation of the Study Programme by a Stakeholder – PhD Study Programme Molecular Biology (full-time form)

4. - Structure and content of the study programme

a) - The institution describes the rules for the design of study plans within the study programme.

The process of creating, modifying, and approving study programs is governed exclusively by the standards for the SAAHE SR study program and the university guidelines created based on the standard for the internal quality assurance system.
https://www.ucm.sk/files/legislativa/10-2024-smernica_o_vytvarani_uprave_a_schvalovani_studijnych_programov_odborov_habilitacneho_konania_a_inauguracneho_konania_a_podavanie_ziadosti_na_saavs_uplne_znenie.pdf
The study plan fully reflects the requirements established for the field of study Biology within the system of fields of study (core knowledge, abilities, and skills) and at the same time aims to enable students to further specialize, according to their own interests, in interdisciplinary biological disciplines. The core topics are covered as follows:

1st–2nd year of study:

The compulsory courses include *Methods of Molecular Biology* and *Specialized English Language for Doctoral Students*. The compulsory elective courses include *Genomics for Doctoral Students*, *Proteomics for Doctoral Students*, *Molecular Biology for Doctoral Students*, *Agricultural Biotechnology for Doctoral Students*, *Functional Analysis of Proteins and Modelling*, *Reproductive Biology of Higher Plants*, and *Selected Chapters in Plant Stress Physiology and Molecular Biology*.

Within the study and pedagogical-educational activities, the student completes selected activities for which credits are awarded, including completion of compulsory and compulsory elective courses, independent teaching activities of the doctoral student I–VII, supervision of a bachelor's thesis, preparation of a review report on a bachelor's thesis, authorship or co-authorship of teaching materials, independent study of scientific literature according to the supervisor's recommendation I and II, and dissemination and application of scientific and technological results in practice.

The creative activity component is appropriately designed and consists of the following parts:

- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q1 or Q2 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q1 or Q2 according to JCR IF
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q1 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q1 according to JCR IF
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q2 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q2 according to JCR IF
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q3 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q3–Q4 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science or Scopus databases without classification in Q1–Q4 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q1–Q4 according to JCR IF and other creative activities, such as publication in a peer-reviewed proceedings volume, active participation in an international scientific event (documented by a published conference contribution), active participation in a national scientific event (documented by a published conference contribution), membership in a research team of an international scientific project registered at UCM, membership in a domestic project research team (e.g., APVV, VEGA, KEGA, OPVaI) registered at UCM, citation of a publication output indexed in the Web of Science or Scopus databases (excluding self-citations and requiring FPV UCM affiliation), obtaining an internal grant, acquisition of a new experimental methodology I, acquisition of a new experimental methodology II, and presentation at a seminar.

Annex 12 – Recommended Study Plan of the PhD Study Programme Molecular Biology (full-time form)

b) - The institution compiles the recommended study plans for individual study paths.

Attachment_12_ Recommended_study_plan_PhD_ Molecular biology_full-time

c) - The study plan generally states:

Attachment_11_Subject information sheets_PhD._Molecular biology
Study and pedagogical-educational activities:
1. Doctoral student’s own pedagogical activity I-VII
2. Supervision of the final bachelor’s thesis
3. Elaboration of an opinion for the final work
4. Authorship or co-authorship in the creation of teaching materials
5. **Independent study of professional literature according to the recommendation of the supervisor I, II***
6. Supervising the work presented at the student scientific conference
7. Dissemination and application of the results of science and technology in practice

Compulsory subjects:
8. Dissertation state exam
9. Dissertation defence
10. **Methods of molecular biology**
11. Professional English for doctoral students

Compulsory optional subject:
12. **Genomics for doctoral students**
13. Proteomics for doctoral students
14. Molecular biology for doctoral students
15. Agricultural biotechnologies for doctoral students
16. Functional analysis of proteins and modelling
17. Reproductive biology of higher plants
18. Selected chapters on the physiology and molecular biology of plant stress

Creative activity:
19. First-author publication in a scientific journal registered in the Web of Science databases and included in Q1 according to JCR IF
20. Publication in a scientific journal registered in the Web of Science databases and included in Q1 according to JCR IF
21. First-author publication in a scientific journal registered in the Web of Science databases and included in Q2 according to JCR IF
22. Publication in a scientific journal registered in the Web of Science databases and included in Q2 according to JCR IF
23. First-author publication in a scientific journal registered in the Web of Science databases and included in Q3 according to JCR IF
24. Publication in a scientific journal registered in the Web of Science databases and included in Q3 according to JCR IF
25. Publication in a scientific journal registered in the Web of Science databases and included in Q4 according to JCR IF
26. Publication in a scientific journal registered in the Web of Science or Scopus databases without inclusion in Q1-Q4 in JCR IF
27. Other creative activity
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* the profile subjects are marked in bold

d) - The institution states the number of credits, the achievement of which is a condition for proper completion of studies and other requirements that the student must meet within the study programme and for its proper completion, including the requirements for state examinations, rules for re-study and rules for the extension, interruption of study.

The study programme is implemented in accordance with Act No. 131/2002 Coll. on Higher Education Institutions, the Study Regulations of the University of Ss. Cyril and Methodius in Trnava, and the relevant internal directive of UCM governing doctoral studies. A condition for the proper completion of studies is the acquisition of the prescribed number of credits in accordance with the accredited study programme, completion of all compulsory courses, fulfilment of obligations arising from the individual study plan of the doctoral student, successful completion of the dissertation examination, and the defence of the dissertation thesis. The conditions governing the course of studies, assessment of study obligations, repetition of courses, interruption of studies, and extension of the study period are regulated by the Study Regulations of UCM and the internal directive governing doctoral studies. A student may apply for interruption of studies or extension of the standard length of study under the conditions stipulated by the internal regulations of the university. Decisions on such applications are made by the dean of the faculty based on the recommendation of the departmental committee or the supervisor.

e) - For individual study plans, the institution states the requirements for completing the individual parts of the study programme and the student's progress within the study programme in the given structure:

Study Component – **50 credits**
Pedagogical and Educational Activities – **35 credits**
Creative Activities – **95 credits**
State Examination – **60 credits**
The total number of credits required for the completion of doctoral studies is **240 credits.**
The credit allocation of courses reflects their level of difficulty and the intensity/workload of the student. Profile courses generally involve a higher workload. At the level of the Faculty of Natural Sciences of UCM, student workload is defined as follows:

- 1 credit corresponds to 30 hours of workload, including independent study and independent creative activities.
- This means that the student workload amounts to 900 hours per semester, including independent study and independent creative activities, and 1800 hours per academic year, including independent study and independent creative activities.

f) - The institution describes the rules for verification of learning outcomes, students assessment and the possibilities of appealing against the assessment.

The rules for the verification of educational outcomes and the evaluation of students and the possibilities of corrective procedures against this evaluation are clearly described in the study regulations of the university, which the Faculty of Natural Sciences follows.
Študijný poriadok UCM
https://www.ucm.sk/files/sk/univerzita/legislativa/72025-studijny-poriadok-univerzity-sv-cyrila-metoda-trnave43.pdf
Study Regulations
Part Two: § 11, §§ 14–20

g) - Conditions for recognition of studies or a part of studies.

The rules for the verification of educational outcomes and the evaluation of students and the possibilities of corrective procedures against this evaluation are clearly described in the study regulations of the university, which the Faculty of Natural Sciences follows.
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2020-8_Studijny_poriadok_UCM_AJ.pdf
Study Regulations
Part Two: § 11a
Directive on the Recognition of Subjects: https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-17_Smernica_o_uznavani_absolvovanych_predmetov_AJ.pdf

h) - The institution states the topics of final theses of the study programme (or a link to the list).

Topics of final theses for all accredited study programmes:
https://fpv.ucm.sk/sk/veda-vyskum/doktorandske-studium/
All final thesis topics are also available in the university's Academic Information System AIS2 for the given academic year for accredited study programmes:
https://ais2.ucm.sk/ais/portal/changeLocale.do?locale=SK

i) - The institution describes or refers to:

The proposals for the final theses are published by the training institutes through the academic information system (hereinafter referred to as "AIS") during the winter semester, no later than 31 January of the relevant academic year. The listed topics for the biotechnology study program are published on the faculty's website
https://fpv.ucm.sk/sk/veda-vyskum/doktorandske-studium/
The final thesis must be prepared according to the Rector's Directive on the requisites of final theses, their bibliographic registration, control of originality, storage, and access to the University of Ss. Cyril and Methodius in Trnava (valid since 2021)
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-31_Smernica_o_nalezitostiach_zaverecnych_prac,_ich_bibliografickej_registracii,_uchovavani_a_spristupnovani_na_UCM_AJ.pdf
https://www.ucm.sk/en/university/legislation/
and by the Study Regulations of the University of Ss. Cyril and Methodius in Trnava, which was developed by § 15, para. 1, letter b of Act 131/2002 Coll. on Higher Education and approved by the Academic Senate of UCM on April 28, 2020. The final thesis is a bachelor's thesis, a diploma thesis, and a dissertation. Through the dissertation, the student demonstrates the ability to work creatively in the field of study in which he completed the study program. The dissertation will be prepared by the student under the guidance of the supervisor by the internal regulations of UCM and the relevant faculty. The dissertation is assessed by a pair of opponents. The supervisor and the opponents will prepare a written report on the dissertation. The student has the right to one copy of the supervisor's and opponents' report no later than three days before the dissertation defense. The dissertation is a state exam. The commission for state examinations negotiates the result of the dissertation defense by a closed vote.
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2019-9_Smernica_o_plagiatorstve_AJ.pdf
- opportunities and procedures for participation in student mobility,
FNS students who are interested in a stay abroad can take advantage of the wide range of mobilities through the Erasmus + program or they can complete a stay abroad based on international bilateral agreements or take advantage of opportunities under other mobility and scholarship schemes and programs. FNS UCM students apply to their department coordinator in the form of a written application, which contains the contact details of the applicant and a brief justification of the study stay, prospective benefits. The system of allocating places within the ERASMUS + program takes place in the form of a selection procedure at the faculty. The application deadline, the date of the selection procedure and the selection criteria for outgoing students are published on the faculty's website.
https://www.ucm.sk/en/university/international-relations/international-relations.html
The faculty, based on a transparent selection procedure, according to proposals from the departments, nominates students for mobility under the valid between departmental bilateral agreements.
- rules for adherence to academic ethics and rules for drawing consequences,
The rules are determined by the UCM Code of Ethics in Trnava. The Code of Ethics is binding for all members of the academic community, pedagogical and non-pedagogical employees of UCM.
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/ID_N._2018-2_Code_of_Ethics_of_the_University_of_Ss._Cyril_and_Methodius_in_Trnava.pdf
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-14_Smernica_o_vybavovani_staznosti_na_UCM_AJ.pdf
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-15_Smernica_o_vybavovani_otazok,_vyjadreni,_nazorov,_ziadosti,_podnetov_a_navrhov_na_UCM_AJ.pdf
- procedures applicable to students with special needs,
Work with students with special needs at UCM is managed by the Support Center for Students with Special Needs. Its mission is to help and support students of all faculties and institutes of the University of Ss. Cyril and Methodius in Trnava in the following areas psychological counselling, social counselling,

support for students with special needs, with sensory, physical and multiple disabilities, with chronic illness, with a disability, with mental illness, with autism, with learning disabilities, with social disadvantage.
Responsible staff:
- for UCM Ivana Švikruhová ivana.svikruhova@ucm.sk
- for FNS RNDr. Vanda Adamcová, PhD. vanda.adamcova@ucm.sk
https://www.ucm.sk/en/university/faculties-workplaces/support-centres/counselling-legal-centre-students-from-socially-disadvantaged-backgrounds-students-specific-needs.html
- procedures for filing complaints and appeals by students.
The submission of suggestions by students is carried out through Black Box - for your opinions, comments and questions and follows the university guidelines https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-15_Smernica_o_vybavovani_otazok,_vyjadreni,_nazorov,_ziadosti,_podnetov_a_navrhov_na_UCM_AJ.pdf
The link to enter the Black Box is on the UCM website https://www.ucm.sk/en/university/black-box-ucm.html

5. - Course information sheets of the study programme

In the structure according to Decree no. 614/2002 Coll.

Attachment 11_List of information sheets_PhD_Molecular biology

6. - Current academic year plan and current schedule

(or hyperlink).

https://www.ucm.sk/en/study-ucm/study-english-language/

7. - Persons responsible for the study programme

a) - A person responsible for the delivery, development, and quality of the study programme (indicating the position and contact details).

prof. Ing. Štefan Janeček, DrSc.
stefan.janecek@ucm.sk

b) - List of persons responsible for the profile courses of the study programme with the assignment to the course and provided with a link to the central Register of university staff and with contact details (they may also be listed in the study plan).

Prof. Ing. Štefan Janeček, DrSc.
https://www.portalvs.sk/regzam/detail/14371
- Functional Analysis of Proteins and Modelling
- Independent Study of Scientific Literature According to the Supervisor’s Recommendation I, II
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q1 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q1 according to JCR IF
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q2 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q2 according to JCR IF
- First-author publication in a scientific journal indexed in the Web of Science database and ranked in Q3 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q3 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science database and ranked in Q4 according to JCR IF
- Publication in a scientific journal indexed in the Web of Science or Scopus databases without classification in Q1–Q4 according to JCR IF

Prof. Mgr. Daniel Mihálik, PhD.
https://www.portalvs.sk/regzam/detail/10269
- Genomics for Doctoral Students
- Molecular Biology for Doctoral Students

Assoc. Prof. Ing. Miroslav Glasa, DrSc.
https://www.portalvs.sk/regzam/detail/32350
- Methods of Molecular Biology

Assoc. Prof. RNDr. Ľubica Uváčková, PhD.
https://www.portalvs.sk/regzam/detail/24654
- Proteomics for Doctoral Students
- Reproductive Biology of Higher Plants

Prof. Mgr. Ildikó Matušíková, PhD.
https://www.portalvs.sk/regzam/detail/24651
- Selected Chapters in Plant Stress Physiology and Molecular Biology

c) - Reference to the research/art/teacher profiles of persons responsible for the profile courses of the study programme.

Scientific and pedagogical characteristics of the persons responsible for the profile courses are available at:
https://fpv.ucm.sk/sk/fakulta/ustavy-pracoviska/ustav-biologie-biotechnologie.html
https://fpv.ucm.sk/sk/fakulta/ustavy-pracoviska/ustav-chemie-environmentalnych-vied.html

d) - List of teachers of the study programme with the assignment to the course and provided with a link to the central Register of university staff and with contact details (may be a part of the study plan).

Is part of the study plan

e) - List of the supervisors of final theses with the assignment to topics (indicating the contact details).

The structure of the academic staff provides a sufficient guarantee of an adequate ratio between the number of university teachers and the number of final theses within the respective level of higher education study. All final theses are supervised by teachers with appropriate teaching experience and the corresponding level of education.
The list of thesis supervisors and thesis topics includes:
Prof. RNDr. Juraj Krajčovič, CSc., Prof. Ing. Štefan Janeček, DrSc., Assoc. Prof. Ing. Miroslav Glasa, DrSc., Assoc. Prof. RNDr. Ľubica Uváčková, PhD., Prof. RNDr. Ján Kraic, PhD., Prof. Mgr. Daniel Mihálik, PhD., Dr. Domenico Pangallo, DrSc., RNDr. Zuzana Gerši, PhD. (VKS IIa), and Mgr. Dominika Vešelényiová, PhD. (VKS IIa) are affiliated with the Institute of Biology and Biotechnology, Faculty of Natural Sciences, UCM in Trnava. Prof. Mgr. Ildikó Matušíková, PhD. is affiliated with the Institute of Chemistry and Environmental Sciences, Faculty of Natural Sciences, UCM in Trnava.
The structure of the academic staff provides a sufficient guarantee of an adequate ratio between the number of university teachers and the number of final theses within the respective level of higher education study. All final theses are supervised by teachers with appropriate teaching experience and the corresponding level of education.

Dissertation Thesis Topics and Supervisors for the Doctoral Study Programme

- Analysis of the Grapevine Virome (*Vitis vinifera* L.) and Optimization of Molecular Detection of Viral Pathogens
- Dynamics of Digestive Processes in Carnivorous Plants
- Bioinformatic Approaches to the Study of Sequences, Structures, Specificities, and Evolution of Amylolytic Enzymes
- Gut Microbiota and Diabetic Peripheral Neuropathy: The Effect of Cemtirestat in a Rat Model of Diabetes
- Starter and Adjunct Cultures for the Production of Slovak Bryndza Cheese with Traditional Organoleptic Properties
- Meiotic Genes and Their Expression in Asexual Euglenoid Flagellates
- Investigation of the Locomotor Behaviour of Euglenoid Flagellates Depending on Cellular State
- Analysis of the Metabolism of the Flagellate *Euglena gracilis* Using Proteomic Methods
- Study of Genetic Variants Associated with Periodontitis and Their Association with the Periodontal Microbiome
- Evolution of Amylolytic Enzymes – Bioinformatic Approaches to the Study of Their Sequences, Structures, and Specificities
- The Effect of Plastid Damage and Absence of Stigma in Mutants of the Flagellate *Euglena gracilis* on Their Motility
- Molecular Detection and Diversity of Viral Pathogens in Wild-Growing Perennial Woody Plants Across Agroecological Interfaces
- Molecular Analysis of the Virome of Fruit Trees from Different Agroecological Contexts
- Allocation of Defence Mechanisms Against Environmental Stress in Agricultural Crops
- Molecular Strategies of Plants for Uptake, Distribution, and Allocation of Toxic Metals in Plants
- Phenotypic, Genotypic, and Phylogenetic Analysis of Pathogenic *Vibrio* Species Isolated from Aquatic Habitats in Slovakia
- Evolution of Amylolytic Enzymes
- Distribution Modelling as a Tool for Obtaining Non-Invasive Hair Samples of the Brown Bear

f) - Reference to the research/art/teacher profiles of the supervisors of final theses.

Scientific and pedagogical characteristics of the supervisors of final theses are available at:
https://fpv.ucm.sk/sk/fakulta/ustavy-pracoviska/ustav-biologie-biotechnologie.html
https://fpv.ucm.sk/sk/fakulta/ustavy-pracoviska/ustav-chemie-environmentalnych-vied.html

g) - Student representatives representing the interests of students of the study programme (name and contact details).

Mgr. Alexandra Vozárová (vozarova5@ucm.sk), PhD student of the Molecular Biology study programme
Mgr. Daniil Vainberg (vainberg1@ucm.sk), PhD student of the Molecular Biology study programme

h) - Study advisor of the study programme (indicating contact details and information on the access to counseling and on the schedule of consultations).

RNDr. Zuzana Gerši, PhD.
mail: zuzana.gersi@ucm.sk
The information on access to counselling is published on the faculty's website

i) - Other supporting staff of the study programme – assigned study officer, career counselor, administration, accommodation department, etc. (with contact details).

Student Affairs Office of UCM
Ing. Zuzana Obúlaná, e-mail: zuzana.obulana@ucm.sk
Head of the UCM Student Dormitory
Mgr. Janka Gajdová, e-mail: janka.gajdova@ucm.sk

8. - Spatial, material, and technical provision of the study programme and support

a) - List and characteristics of the study programme classrooms and their technical equipment with the assignment to learning outcomes and courses (laboratories, design and art studios, studios, workshops, interpreting booths, clinics, priest seminaries, science and technology parks, technology incubators, school enterprises, practice centers, training schools, classroom-training facilities, sports halls, swimming pools, sports grounds).

The educational process is carried out in classrooms located in the central UCM buildings at J. Herdu Square, Hajdóczyho Street, and in the UCM building in Špačince (4 km from the university headquarters in Trnava), where suitable facilities for lectures and seminars are available. All classrooms are equipped with video projection technology. The laboratories in which research activities are carried out are equipped with facilities for all work related to protein biochemistry (isolation and characterization) and molecular biology (cloning, gene expression, mutagenesis, and bioinformatic analysis). Advanced instrumental and computational infrastructure is also available. Examples include a Thermomixer Comfort, IKA MS3 BASIC, Bandelin Sonopuls UW 2200 sonicator, Astell autoclave, microscopes, Biotek El800 and MRX (Dynex) microplate readers, HPLC systems (Waters, Pye Unicam, Young Lin, and Philips with UV/Vis and DAD detectors), Shimadzu FTIR-8000 infrared spectrophotometer, FLASH EA2000 CHNS/O elemental analyzer, VARIAN CARY 50 and M350 Camspec UV-Vis spectrophotometers, UNIVERSAL 320 R laboratory centrifuge, PSU-20 orbital shaker (Biosan), ES-20 environmental shaker, HETTICH UNIVERSAL 32 centrifuge, Minispin centrifuge, and HOEFER SE 245 electrophoresis unit. The laboratories are also equipped with all necessary instruments and devices for the preparation of recombinant DNA molecules, including PCR cyclers (including gradient cyclers), laboratory flow and PCR boxes, centrifuges, thermostats, systems for agarose and polyacrylamide gel electrophoresis, shakers, and DGGE equipment. In addition, extensive software resources required for bioinformatic research are available.

b) - Characteristics of the study programme information management (access to study literature according to Course information sheets, access to information databases and other information sources, information technologies, etc.).

Each faculty student is provided with internet access. FPV UCM students may also work in computer laboratories outside scheduled classes according to their own interests and needs related to seminar and practical assignments. They have access to computer classrooms with internet-connected computers and an open-access internet room with appropriate software equipment located in the main UCM buildings. An additional terminal classroom is available at the FPV UCM facilities in Špačince.
Computer classrooms are periodically upgraded with more powerful computers and new informatics and chemical software (Dragon 6, IBM SPSS Statistics 19, Analyse-it, QC Expert 3.1, Statistica 10.2 Base, and Statistica 10.2 DataMiner). All teachers as well as internal doctoral students are assigned a computer connected to the internet network. The faculty uses the Academic Information System AIS2.
At the university library, students have on-site access to core study literature (books, professional journals, and company materials). Through the NAVIGA system, access is provided to electronic resources such as Elsevier-ScienceDirect, Elsevier-Engineering Village-Referex, Springer E-Books, SAGE Premier 2008–2009, Emerald Insight, Wiley-InterScience – E-Books, Wiley-InterScience – Reference Works, and the IET Digital Library. Through the NISPEZ system, access is provided to electronic information resources including Knovel Library, ProQuest Central, ScienceDirect, SpringerLink, Wiley Online Library, WoK-Current Contents, WoK-Web of Science, Web of Knowledge, Scopus, and Reaxys.

c) - Characteristics and extent of distance education applied in the study programme with the assignment to courses. Access, manuals of e-learning portals. Procedures for the transition from contact teaching to distance learning.

Study in accredited study programs in full-time and part-time study is carried out at UCM using the full-time method. The method of distance education is used in times of unfavorable epidemiological situation, or in other situations that seriously limit the implementation of full-time teaching, according to § 108e par. 2 of the University Act, in times of crisis, educational activities carried out by the full-time method can be carried out by the distance method. This form of education is governed by the directive: https://www.ucm.sk/docs/legislativa/2021/8_21_distancna_vyucba.pdf

d) - Institution partners in providing educational activities for the study programme and the characteristics of their participation.

Slovak Academy of Sciences – multiple cooperating institutions providing experimental facilities for parts of dissertation research (Institute of Virology, Institute of Molecular Biology of the SAS, public research institution, Biomedical Research Center, Laboratory of Environmental and Food Microbiology of the Biomedical Research Center SAS, Bratislava, etc.).
National Agricultural and Food Centre, Research Institute of Plant Production, Piešťany – cooperating institution providing experimental facilities for parts of dissertation research.
National Agricultural and Food Centre, Research Institute of Animal Production, Nitra – cooperating institution providing experimental facilities for parts of dissertation research.
International Laser Centre, Bratislava – cooperating institution providing experimental facilities for parts of dissertation research.
ICARST, non-profit organization, Bratislava – joint laboratory located in the FPV UCM building in Špačince.

e) - Characteristics of the possibilities for social, sports, cultural, spiritual and social activities.

University of Ss. Cyril and Methodius in Trnava supports the extracurricular activities of its students in the form of financial contributions to ensure sports and cultural events. Every year, in addition to the earmarked contribution from the Ministry of Education, Research and Sports, a part of the funds is allocated within the university budget.
The procedure for submitting and approving applications for contributions to students' sports and cultural events is regulated by the university's internal regulations. Application for a financial contribution.
Students can participate in activities:

- Folklore ensemble Trnafčan
- UniTTy University Choir
- THE.ART.RE University Theater
- Hit UCM Trnava - University Women's Premier League Women's Volleyball Team
- Student magazine FF - Parazol
- Student magazine Atteliér
- Student Radio Aetter
- FMK TV
- FMK student project gaudeo.sk

f) - Possibilities and conditions for participation of the study programme students in mobilities and internships (indicating contact details), application instructions, rules for recognition of this education.

The possibilities and conditions of students' participation in mobility are published on the faculty's website.
https://www.ucm.sk/en/university/international-relations/international-relations.html
The system of allocating places within the ERASMUS + program takes place in the form of a selection procedure at the faculty.
https://www.ucm.sk/en/erasmus/
The rules for the recognition of this education are governed by the UCM Study Regulations and the document
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-17_Smernica_o_uznavani_absolvovanych_predmetov_AJ.pdf

9. - Required abilities and admission requirements for the study programme applicants

a) - Required abilities and necessary admission requirements.

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 in Trnava.
https://www.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-29_Poriadok_prijimacieho_konania_UCM_AJ.pdf
https://www.ucm.sk/docs/legislativa/2022/predpisy_-_en/2020-8_Studijny_poriadok_UCM_AJ.pdf
The basic condition for admission to doctoral studies is a second-level university education (Section 56 (3) of Act No. 131/2002 Coll. On Higher Education Institutions and on Amendments to Certain Acts). Graduates of domestic or foreign universities can apply for admission to study if they have completed a master's or engineering study.

b) - Admission procedures.

https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-29_Poriadok_prijimacieho_konania_UCM_AJ.pdf

The admission procedure at FPV UCM is carried out in accordance with Act No. 131/2002 Coll. on Higher Education Institutions and on Amendments and Supplements to Certain Acts, §§ 56–58. The admission process allows an applicant who demonstrates fulfilment of the specified admission requirements to become a student of the selected study programme. An applicant who does not demonstrate fulfilment of the basic admission requirements at the time of verification may be admitted conditionally, provided that they demonstrate fulfilment of the basic admission requirements no later than the date set for enrolment in the study. Applications for higher education studies are accepted within a deadline that is publicly announced, usually by the end of April of the respective academic year. Applicants apply for announced topics published on the faculty's website. Admission to doctoral studies includes an admission interview conducted in the form of a discussion, during which the applicant presents their motivation, a project proposal related to the dissertation topic, their prerequisites for study, as well as their knowledge of a foreign language.

c) - Results of the admission process over the last period.

Academic Year 2017/2018 – Molecular Biology: 3 applications, 3 admitted, 3 enrolled.
Academic Year 2018/2019 – Molecular Biology: 5 applications, 4 admitted, 4 enrolled.
Academic Year 2019/2020 – Molecular Biology: 0 applications, 0 admitted, 0 enrolled.
Academic Year 2020/2021 – Molecular Biology: 6 applications, 5 admitted, 5 enrolled.
Academic Year 2021/2022 – Molecular Biology: 3 applications, 3 admitted, 2 enrolled.
Academic Year 2022/2023 – Molecular Biology: 2 applications, 2 admitted, 2 enrolled.
Academic Year 2023/2024 – Molecular Biology: 3 applications, 2 admitted, 2 enrolled.
Academic Year 2024/2025 – Molecular Biology: 4 applications, 3 admitted, 3 enrolled.

10. - Feedback on the quality of provided education

a) - Procedures for monitoring and evaluating students' opinions on the study programme quality.

Quality assurance of pedagogical staff and control and monitoring of the pedagogical process in the form of observations are defined by the directive
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-52_Smernica_o_hodnoteni_tvorivej_cinnosti_na_UCM_AJ.pdf
The faculty ensures that the university teacher is the bearer of knowledge and experience for the transfer of knowledge in the subject he/she teaches. As part of the selection process, the faculty ensures compliance with the requirements of the minimum criteria related to education and the field, while the faculty defines additional criteria by which the teacher checks the carrier of professional knowledge and experience with regard to the subject he teaches. Emphasis is placed on the fact that university teachers use effective methods, methods and procedures for transferring knowledge in the subjects they teach. The function of monitoring the pedagogical process is to monitor and regularly evaluate the quality of the pedagogical process. The faculty declares its support for the professional growth of teachers.
Monitoring and evaluation of study programs and subjects and surveys of the opinions of relevant target groups in the field of education are defined by Directive 3/2014 Creation and monitoring of study programs. The faculty thus strives to eliminate the risk of low quality and content focus of the study program in order to concentrate and process information from implemented questionnaire events and observations or other evaluations, review the pedagogical documentation of the study program and compare it with the concept of analogous study programs at renowned foreign universities.
The function of the survey of opinions of relevant target groups is to find out their opinions on various aspects of educational activities in order to obtain information that will lead to its improvement and to the adoption of effective measures to help increase quality in all areas of faculty activities. The relevant target groups are the internal target groups of the respondents (students, teachers and other staff) and the external target groups of the respondents (especially graduates, employers and practitioners).
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-18_Ziskavanie_relevantnej_spatnej_vazby_od_zainteresovanych_stran_AJ.pdf
Monitoring and quality evaluation in the field of international relations and cooperation:
UCM offers students and teachers the opportunity to complete a study stay abroad through the ERASMUS program at one of the partner universities. In addition, it supports students and teachers in completing international mobility in other academic cooperation and exchange programs. A report on the summary results of regular monitoring and evaluation of quality in the field of international relations and cooperation is prepared once a year, which is discussed and approved by the Rector's Board, the Dean's Board and the Scientific Council of the relevant faculty.

b) - Results of student feedback and related measures to improve the study programme quality.

Monitoring and evaluation of quality in the area of information and promotion represent a key domain for reducing information inequality and increasing the visibility of the faculty and its study programmes among students, applicants, teachers, employers, and other representatives of the public. Evaluation is carried out through a comprehensively prepared report or via an information system for quality measurement and assessment.
Feedback results at FPV UCM are available on the UCM SharePoint (authorised access), and the evaluation of study programmes by students or staff forms part of each submitted dossier.
All available evaluations of individual stakeholders are accessible here:
https://fpv.ucm.sk/sk/fakulta/politika-kvality/hodnotenie-kvality.html (in slovak)

c) - Results of graduate feedback and related measures to improve the study programme quality.

Feedback results are published in the FPV Quality Report. The report includes an evaluation of questionnaire surveys as well as proposed measures aimed at addressing identified shortcomings. The results are also reflected in the Report on Educational Activities (particularly feedback from students, graduates, and employers), which also contains proposals for corrective actions.
In addition, all stakeholders are invited annually to evaluate the study programmes, and reports based on anonymous questionnaires are prepared. These reports are fully accessible on the FPV UCM SharePoint (authorised access) or here: https://fpv.ucm.sk/sk/fakulta/politika-kvality/hodnotenie-kvality.html (in slovak).

11. - References to other relevant internal regulations and information concerning the study or the study programme student

(e.g study guide, accommodation regulations, fee directive, guidelines for student loans, etc.).

Study Schedule of FPV UCM
https://www.ucm.sk/en/university/calendar/study-schedule.html
Accommodation Regulations of the UCM Student Residence Hall
https://www-old.ucm.sk/docs/legislativa/2022/predpisy_-_en/2021-27_Ubytovaci_poriadok_studentskeho_domova_UCM_AJ.pdf
Directive on Tuition Fees and Study-Related Charges at UCM
https://www-old.ucm.sk/docs/dokumenty/2022/2021-20_Smernica_o_skolnom_a_poplatkoch_spojenych_so_studiom_UCM_AJ.pdf