The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

Description of the study programme

Name of the higher education institution: University of Ss. Cyril and Methodius in Trnava
Address of the higher education institution: Nám. Jozefa Herdu 2, 91701 Trnava
Identification number of the higher education institution: 36078913
Name of the faculty: Faculty of Natural Sciences
Address of the faculty: Nám. Jozefa Herdu 2, 91701 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: 10.09.2018
Date of the latest change[1] in the study programme description: 30.11.2018
Reference to the results of the latest periodic review of the study programme by the institution:
Reference to the assessment report of the application for accreditation of the study programme under § 30 of Act no. 269/2018 Coll.[2]:

1) Basic information about the study programme

a) Name of the study program and its number according to the register of study programmes.
Biotechnology
183534 (AN)

b) Degree of higher education and ISCED-F education degree code.
1 S
864

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

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[1] *The institution compiles a description of the study programme as an annex to the application for accreditation of the study programme.*

- *When submitting an application pursuant to § 30 (1) of Act no. 269/2018 Coll. the higher education institution states in the description only the data available at the time of application.*
- *Once the accreditation (or the internal approval of the study programme by the institution programme approval authority with the right to design programmes within the given field and degree) has been granted, the institution permanently makes the description available to the stakeholders of the study programme.*
- *The institution may choose the form of processing, visualization, and publication of the description, suitable for students, teachers and another users.*
- *In individual parts of the description, the institution may refer to another internal document that sufficiently describes the relevant area and is publicly available.*
- *In individual parts of the description, the institution may refer to a place in the information system which contains the relevant up-to-date information.*
- *The institution ensures that the description is up-to-date (if the change in the description is in the nature of a modification of the study programme and the change is made in accordance with § 30 (9) of Act No. 269/2018 Coll., the institution makes the change and publishes it only after approval by the Agency).*

2 If the change is not a modification of the study programme according to § 30 of Act no. 269/2018 Coll.

[3] It is stated only if the accreditation of the study programme has been granted according to § 30 of Act no. 269/2018 Coll.

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation 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[3].
4. Biotechnology
2908T00

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

f) Awarded academic degree.
Doctor (philosophiae doctor) PhD.

g) Form of study[4].
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[5].
1. English 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

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[6].
The study program encourages:
- 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 scientific and study field, emphasizes the link research - development - application and evaluation of own contribution to practice.
- the creative activity of the graduate in the field of biotechnology.

The graduate is fluent in an active foreign language (English), can work in a team, forecast developments in their field.
- As part of the study, he/she deepens his/her knowledge of biotechnology, biology, and analytical chemistry, learns the principles of scientific work, forms of processing and presentation of results. They gain an experimental skills and experience in working with modern devices.
- They will learn to search, process, and interpret information from available sources (scientific databases, professional publications). They can process, publish, and present the obtained results at scientific events.
- Students are also involved in solving scientific projects, which develops and deepens the principles of scientific work, solving complex problems, analytical and synthetic thinking, a sense of teamwork.

	Educational objectives	Acquired knowledge*	Acquired skills*	Acquired competencies and transferable competencies*
Study and pedagogical-educational activities	Independent Study of Literature according to the Recommendation of the Supervisor		x	
	Advances in Biotechnology	x		
	Agricultural Biotechnology for PhD Students	x		
	Biosafety and Marketing of Biotechnology and its Products	x		
	Biotechnological Transformations of Biomass, Biofuels and Biorefineries	x		
	DNA Recombination and Genetic Transformation Technology	x		

4 According to the International Standard Classification of Education. Fields of Education and Practice 2013.
5 According to § 60 of Act no. 131/2002 Coll. on Higher Education Institutions.
6 It means the languages in which all learning outcomes are achieved and all related courses of the study programme as well as the state examinations are carried out. The institution independently provides information on the possibility of partial study parts/courses in other languages in part 4 of the description.
7 Learning objectives are achieved in the study programme through measurable learning outcomes in individual parts (modules, subjects) of the study programme corresponding to the relevant level of the Qualifications Framework in the European Higher Education Area.

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

	Industrial Biotechnology for PhD Students	**x**		
	New Trends, Procedures and Methods in the Study of Living Organisms	**x**		
Creative activity	**Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 or O2 in JCF IF**			**x**
	Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 – O4 in JCF IF			**x**

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 study program is an expert who finds employment in various areas of social practice. He will gain knowledge of biotechnology and related areas (especially biological, chemical, genetic and their specializations) conditioning the development of biotechnology, especially in the areas of so-called white, green, and red biotechnologies. He can participate in research, development, and innovation, especially in industry, agriculture, health, environment, energy, as well as apply his/her knowledge directly in production practice in these areas.

The graduate

- is fluent in English,

- can work in a team and forecast developments in his field,

- can work independently and creatively scientifically in various fields of biotechnology as well as in frontier disciplines,

- masters scientific approaches and research methodology in selected application areas of biotechnology

- 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, laboratory medicine, food industry and elsewhere

- the graduate has basic managerial skills, can lead a research team, plan team tasks and has knowledge of relevant economic, legal, and ethical aspects.

Based on the acquired knowledge, the graduate of the study program can teach specialized biotechnology subjects at the university.

The graduates of the Biotechnology study program can seek employment in a wide range of workplaces with a biological and chemical focus in research teams, as well as independent work with research and technical focus (SAS, universities, ministries of health, agriculture and forestry, food industry, environment, etc.), as well as directly in production practice. They are ready to meet the requirements of specialized institutions requiring fieldwork, especially in workplaces dedicated to modern biotechnologies, as well as environmentally oriented workplaces. They will also be used in state and local government institutions. Graduates also have a wide range of applications in private companies and industrial enterprises with an innovation-technological orientation in biotechnology, but also in related fields.

https://katedra-biotechnologii.webnode.sk/informacie-pre-uchadzacov/profil-absolventa/

Occupations from profesia.sk:
researcher,
laboratory diagnostician,
product specialist,
chemical production operator,
raw material intake worker,
yeast production distiller/distiller,
production technician,
quality controller,
research and development specialist,
technologist,
agronomist,
sanitation and hygiene specialist.

Specific application in companies:
- **Enviral (Leopoldov) - bioethanol production**
- **Chateau Modra (Modra) - wine production**
- **Natures (Trnava) - production of food supplements**
- **Saneca Pharmaceutical (Hlohovec) - production of medicines**
- **Zentiva (Bratislava) - pharmaceutical production**
- **Evonik Fermas (Slovenská Ľubča) – industrial fermentation processes**
- **Biotika (Slovenská Ľubča) - production of drugs**
- **Bioscience Slovakia - production of antibodies**
- **AXON Neuroscience- medical diagnostics**
- **Cloetta Slovakia (Levice) - confectionery production**
- **Považský cukor (Považská Bystrica) - sugar factory**
- **GlaxoSmithKline Consumer Healthcare (Levice/Bratislava) - research, development and production of drugs**

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

- **Alphamedical (Banská Bystrica) - laboratory equipment**
- **Unilabs Slovensko, s.r.o. (Martin) - laboratory technology**
- **Axxence Slovakia s.r.o. (Bratislava) - food additives**

c) Relevant external stakeholders who have provided the statement or a favourable opinion on the compliance of the acquired qualification with the sector-specific requirements for the profession[7].

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3.) Employability

a) Evaluation of the study programme graduates employability.

The graduates of SP Biotechnology are employed throughout Slovakia, such as Alpha medical, Ltd. (Slovakia), AXON Neuroscience (Bratislava) - R&D Services SE, Bioscience Slovakia, Ltd. (Bratislava), Biotech, Ltd. (Slovakia) - sales of laboratory equipment, Biotika, Inc. (Slovenská Ľubča), Cloetta Slovania, Ltd. (Levice), Enviral, Inc. (Leopoldov), Evonik Fermas, Ltd. (Slovenská Ľubča), Heineken Slovensko, Inc. (Hurbanovo), Henkel Slovakia, Ltd. (Bratislava), Natures, Ltd. (Trnava), Novartis Slovakia, Ltd. (Bratislava), Považský cukor, Inc. (Považská Bystrica), Saneca Pharmaceutical, Inc.(Hlohovec), GSK Group (Levice / Bratislava), VWR International, Ltd. (Slovakia), Zentiva, Inc. (Bratislava), Zvolenská mliekareň, Ltd.(Zvolen), National Agricultural and Food Center (Bratislava, Piešťany, Modra, Nitra), Slovak Academy of Sciences, Slovak Hydrometeorological Institute, State Institute for Drug Control, Public Health Office and universities.

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

Assoc. Prof. RNDr. Miroslav Horník, PhD., Associate Professor in Analytical Chemistry
Assoc. Prof. RNDr. Miroslav Ondrejovič, PhD., Associate Professor in Biotechnology
Assoc. Prof. RNDr. Martin Pipíška, PhD., Associate Professor in the field of Environmental Engineering

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

The selected employers of the graduates of the study program commented positively on the designed study program.
Agramart Inc. (Attachment - Opinion-Agromart a.s.)
BioTech Ltd. (Attachment - Opinion-BioTech s.r.o.)
Celpo spol. Ltd. (Attachment - Opinion-Celpo spol. s.r.o.)
Envien Group (Attachment - Opinion-Envien Group)
Attachment_04_report_on_the_evaluation_of_SP_by_an_interested_part

4.) Structure and content of the study programme[8]

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://intranet.ucm.sk/docs2/predpisy/ostatne/smernica_o_SP/Smernica_o_vytvarani,_uprave_a_schvalovani_studijnych_programov.pdf

The main topics are fulfilled as follows:
1.-2. year of study: Compulsory subjects as Advances in Biotechnology and Professional English for PhD Students and compulsory optional subjects (Biosafety and Marketing of Biotechnologies and their Products, Biotechnological Transformations of Biomass, Biofuels and Biorefineries, Medical and Pharmaceutical Biotechnologies for PhD Students, Study of Structure, Properties and Activities of Compounds and Biomolecules, New Trends, Procedures and Methods in the Study of Living organisms, Advances in Bioanalytical Chemistry, Agricultural Biotechnology for PhD Students, Industrial Biotechnology for PhD Students, Preparation of Projects and Grants in Biotechnology and Recombinant DNA and Genetic Transformation Technologies) suitably cover a wide range of biotechnologies.
Within the study and pedagogical-educational activities, the student completes selected activities for which he/she obtains credits for passing the compulsory subject, passing the compulsory optional subject and own pedagogical activity of doctoral student I-VII, leading the final bachelor's thesis, elaboration of the final thesis (resp. authorship) of created and published teaching material, an independent study of professional literature according to the supervisor's recommendation.
The creative activity is suitably set up and consists of the following parts publication in a scientific journal registered in the Web of Science databases, included in Q1 in JCF IF (1st quarter of the Impact Factor value in the Journal Citation Report), publication in a scientific journal registered in the Web of Science databases included in Q2 in JCF IF (2nd quarter of the Impact Factor value in the Journal Citation Report), publication in a scientific journal registered in the Web of Science databases included in Q3 in JCF IF (3rd quarter of the Impact Factor value in the Journal Citation Report)), publication in a scientific journal registered in the Web of Science databases listed in Q4 in JCF IF (4th quarter of the Impact Factor value in the Journal Citation Report), publication in a scientific journal registered in the Web of Science or Scopus databases with Q1-Q4 in JCF IF, publication in a peer-reviewed proceedings, active participation in a foreign scientific event (article in proceedings), active participation in a domestic scientific event (an article in the proceedings), member of the research team on a foreign scientific project, member of the research team on a domestic scientific project (e.g. APVV, VEGA, KEGA, OPVaI), response to publication output registered in the Web of Science or Scopus databases (must not be autocitation, must be an FNS UCM affiliation), obtaining an internal grant, mastering a new experimental methodology and presenting at a seminar.

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8 In the case of regulated professions in accordance with the requirements for the acquisition of professional competence pursuant to a special regulation.

9 Selected characteristics of the content of the study programme can be stated directly in the Course information sheets or supplemented by the information of the Course information sheets.

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

b) *The institution compiles the recommended study plans for individual study paths[9].*
Attachment_12_Recommended study plan_PhD._Biotechnology

c) *The study plan generally states:*
- *individual parts of the study programme (modules, courses, and other relevant school and extracurricular activities, if they contribute to the achievement of the required learning outcomes and allow to obtain credits) in the structure of compulsory, compulsory optional and optional courses,*
- ***profile courses** of the relevant study path (specialization) within the study programme,*
- *for each learning part/course the learning outcomes, related criteria and rules of their assessment so that the learning objectives of the study programme are met (they can be stated only in the Course information sheets, in the Learning outcomes section and in the Course completion requirements),*
- *prerequisites, co-requisites and recommendations for the design of the study plan,*
- *for each learning part of the study plan/course the applied educational activities (lecture, seminar, exercise, final work, project work, laboratory work, internship, excursion, field practice, professional practice, state exam, etc. or their combinations) suitable for achieving learning outcomes,*
- *methods by which the educational activity is delivered – present, distant, combined (in accordance with the Course information sheets),*
- *outline/syllabus of the course[10],*
- *student workload ("extent" of individual courses and educational activities separately)[11],*
- *credits allocated to each part based on the learning outcomes achieved and the workload involved,*
- *the person responsible for the course (or a partner organization/person[12]) with an indication of the contact details,*
- *course teachers (or participating partner organizations/persons) (may also be mentioned in Course information sheets),*
- *places where the courses are taught (if the study programme is delivered at several workplaces).*

Attachment_11_Subject information sheets_PhD._Biotechnology

Study and pedagogical-educational activity:
1. Own Pedagogical Activity of Doctoral Student I-VII
2. Supervision of the Final Bachelor's Thesis
3. Elaboration of an Opinion for the Final Work of the Bachelor's Study
4. Co-authorship (or Authorship) of Created and Published Teaching Material
5. **Independent Study of Literature according to the Recommendation of the Supervisor I, II**

Compulsory subjects:
6. Dissertation Exam
7. Dissertation Defense
8. Professional English for PhD students
9. Advances in Biotechnology

Compulsory elective subjects:
10. Biosafety and Marketing of Biotechnology and its Products
11. Biotechnological Transformations of Biomass, Biofuels and Biorefineries
12. Medicinal and Pharmaceutical Biotechnologies for PhD students
13. Modern Methods for Studying the Structure, Properties and Activity of Compounds and Biomolecules
14. New Trends, Procedures and Methods in the Study of Living Organisms
15. Advances in Bioanalytical Chemistry
16. Agricultural Biotechnology for PhD Students
17. Industrial Biotechnology for PhD Students
18. Preparation of Projects and Grants in the Field of Biotechnology
19. DNA Recombination and Genetic Transformation Technology

Creative activity
20. Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 or Q2 in JCF IF (1st or 2nd quarter of the impact factor value in the Journal Citation Report)
21. Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1-Q4 in JCF IF (1st-4th quarter of the impact factor value in the Journal Citation Report)
22. Other Creative activity

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 composition of the commission for state examinations is in accordance with the Higher Education Act, pursuant to Section 63, Paragraph 3 of Act no. 131/2002 Coll. on Higher Education Institutions, and with the Study Regulations of the University of Ss. Cyril and Methodius, which was approved by the UCM Academic Senate on June 10, 2013. The State Examination Commission has at least

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10 In accordance with Decree no. 614/2002 Coll. on the study credit system and Act no. 131/2002 Coll. on Higher Education Institutions and on Amendments to Certain Acts.
11 During the assessment, teachers responsible for the course will allow the working group access to the study materials of the course and the content of individual educational activities.
12 We recommend indicating the workload of contact and non-contact teaching in accordance with the ECTS Users' Guide 2015.
13 E.g. when providing the professional practice or other educational activities carried out outside the university.

4 members. The Commission shall be able to act if the chairman of the commission and at least two other members are present. University teachers, acting as professors and associate professors and other experts, approved by the relevant scientific council, have the right to take the state exam in doctoral and master's degree programs. At least two members of the commission shall be university teachers in the capacity of associate professor or professor. In addition to university teachers working as associate professors or professors and other practitioners approved by the Scientific Council, assistant professors with a third-degree university degree also have the right to take state examinations in bachelor's degree programs. At least one member of the commission must serve as an associate professor or professor. The chairman of the commission for state examinations is appointed by the dean from among professors and associate professors at universities. The course of the state examination is managed, and the chairman of the commission is responsible for the activities of the commission.

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:*

- *number of credits for compulsory courses required for proper completion of studies/completion of a part of studies,*
- *number of credits for compulsory optional courses required for the proper completion of studies/completion of a part of studies,*
- *number of credits for optional courses required for the proper completion of studies/completion of a part of studies,*
- *number of credits required for the completion of studies/completion of a part of the studies for the common foundations and for the relevant specialization, in the case of a teaching combination study programme or a translation combination study programme,*
- *number of credits for the final thesis and the defense of the final thesis required for the proper completion of studies,*
- *number of credits for professional practice required for the proper completion of studies/completion of a part of studies,*
- *number of credits required for the proper completion of studies/completion of a part of the studies for project work with the indication of relevant courses in engineering study programmes,*
- *number of credits required for the proper completion of studies/completion of a part of the studies for artistic performances in addition to the final thesis in art study programmes.*

50 credits for the study part,
35 credits for the pedagogical part,
95 credits for the scientific-research part,
60 credits for the state exam.

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.
https://www.ucm.sk/docs/legislativa/studijny_poriadok_ucm_2020.pdf

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.ucm.sk/docs/legislativa/studijny_poriadok_ucm_2020.pdf

h) *The institution states the topics of final theses of the study programme (or a link to the list).*
https://katedra-biotechnologii.webnode.sk/informacie-pre-studentov/doktorandske-studium/doktorandi-kbt-fpv/

i) *The institution describes or refers to:*

- *rules for the assignment, processing, opposition, defense and evaluation of final theses in the study programme,*

  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
  http://fpv.ucm.sk/sk/studium/doktorandske-studium.html
  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)
  Smernica o náležitostiach záverečných prác, ich bibliografickej registrácii, uchovávaní a sprístupňovaní na UCM (effective from September, 1, 2021)

  (template for the elaboration of the final thesis is given https://katedra-biotechnologii.webnode.sk/informacie-pre-studentov/zaverecne-prace/).

  https://www.ucm.sk/sk/legislativa/
  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.
  Smernica o plagiátorstve (effective from February, 1, 2019)

- *opportunities and procedures for participation in student mobility,*

  ANS 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.
  ANS 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 outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

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.
http://fpv.ucm.sk/sk/studium/studijne-pobyty.html
All information about study stays, the Erasmus + project, student mobility, the pedagogical and non-pedagogical staff is also on a separate page: erasmus.ucm.sk.
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.ucm.sk/docs/legislativa/2021/7_21_eticky_kodex_studentov.pdf
  Smernica o vybavovaní sťažností na UCM (effective from May, 1, 2021)
  Smernica o vybavovaní otázok, vyjadrení, názorov, žiadostí, podnetov a návrhov na UCM (effective from May, 1, 2021)
- *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 PhDr. Jana Polakovičová, MBA jana.polakovicova@ucm.sk
  - for ANS RNDr. Beata Vranovičová, PhD. beata.vranovicova@ucm.sk

  https://www.ucm.sk/sk/centrum-podpory-studentov-so-specifickymi-potrebami-01
  Smernica na zabezpečenie všeobecne prístupného akademického prostredia pre študentov so špecifickými potrebami (effective from May, 1, 2019)
- *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
  Smernica o vybavovaní otázok, vyjadrení, názorov, žiadostí, podnetov a návrhov na UCM (effective from May, 1, 2021)
  The link to enter the Black Box is on the UCM website https://www.ucm.sk/sk/black-box/

5.) Course information sheets of the study programme

In the structure according to Decree no. 614/2002 Coll. Attachment 11

6.) **Current academic year plan and current schedule** (or hyperlink).

http://fpv.ucm.sk/sk/studium.html
FNS study schedule for academic year 2021/2022
http://fpv.ucm.sk/sk/rozvrh.html

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. RNDr. Ján Kraic, PhD. (jan.kraic@ucm.sk)
https://katedra-biotechnologii.webnode.sk/struktura-katedry-biotechnologii/

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).
Assoc. Prof. RNDr. Michaela Havrlentová, PhD. (michaela.havrlentova@ucm.sk)
New Trends, Procedures and Methods in the Study of Living Organisms

prof. RNDr. Ján Kraic, PhD. (jan.kraic@ucm.sk)
Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 or O2 in JCF IF
Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 – O4 in JCF IF
Independent Study of Literature according to the Recommendation of the Supervisor
Agricultural Biotechnology for PhD Students

Assoc. Prof. Mgr. Daniel Mihálik, PhD. (daniel.mihalik@ucm.sk)
DNA Recombination and Genetic Transformation Technology

Assoc. Prof. Ing. Jana Moravčíková, PhD. (jana.moravcikova@ucm.sk)
Biosafety and Marketing of Biotechnology and its Products

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

Assoc. Prof. RNDr. Miroslav Ondrejovič, PhD. (miroslav.ondrejovic@ucm.sk)
Advances in Biotechnology
Biotechnological Transformations of Biomass, Biofuels and Biorefineries
Industrial Biotechnology for PhD Students

c) Reference to the research/art/teacher profiles of persons responsible for the profile courses of the study programme.
VTC
https://katedra-biotechnologii.webnode.sk/struktura-katedry-biotechnologii/vedecko-vyskumna-charakteristika-pedagogov-kbt/
http://fpv.ucm.sk/sk/pracovnici-bt.html

Assoc. Prof. RNDr. Michaela Havrlentová, PhD.
prof. RNDr. Ján Kraic, PhD.
Assoc. Prof. Mgr. Daniel Mihálik, PhD.
Assoc. Prof. Ing. Jana Moravčíková, PhD.
Assoc. Prof. RNDr. Miroslav Ondrejovič, PhD.

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).
1. Assoc. Prof. RNDr. Michaela Havrlentová, PhD.
- Modern Methods for Studying the Structure, Properties and Activity of Compounds and Biomolecules
2. RNDr. Michal Konečný, PhD.
- New Trends, Procedures and Methods in the Study of Living Organisms
3. prof. RNDr. Jan Kraic, PhD.
- Agricultural Biotechnology for PhD Students
- Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 or O2 in JCF IF
- Publication in a Scientific Journal Registered in the Web of Science Databases Included in Q1 – O4 in JCF IF
- Independent Study of Literature according to the Recommendation of the Supervisor
4. prof. RNDr. Juraj Krajčovič, CSc.
- New Trends, Procedures and Methods in the Study of Living Organisms
advances in bioanalytical chemistry
5. Assoc. Prof. Ing. Tibor Maliar, PhD.
- Medical and Pharmaceutical Biotechnologies for PhD Students
- Preparation of Projects and Grants in the Field of Biotechnology
6. Assoc. Prof. Mgr. Daniel Mihalik, PhD.
- DNA Recombination and Genetic Transformation Technology
7. Assoc. Prof. PaedDr. Juraj Miština, Ph.D.
- Professional English for PhD Students
8. Assoc. Prof. Ing. Jana MoravčÍková, PhD.
- Biosafety and Marketing of Biotechnology and its Products
9. Assoc. Prof. RNDr. Miroslav Ondrejovič, PhD.
- Biotechnological Transformations of Biomass, Biofuels and Biorefineries
- Industrial Biotechnology for PhD Students
- Advances in Biotechnology
10. prof. Ing. Stanislav Miertuš, DrSc.
- Advances in Bioanalytical Chemistry
- Advances in Biotechnology

e) List of the supervisors of final theses with the assignment to topics (indicating the contact details).
The structure of the teachers of the academic workplace provides a sufficient guarantee of the adequacy of the number of university teachers for the number of final theses in a given level of university study. All final theses are supervised by teachers who have adequate teaching experience and an appropriate level of education. Because the doctoral study program was approved in 2018, the first graduate graduated in the academic year 2020/2021 with thesis:
Plant inhibitors of the serine proteases of the gastrointestinal tract

The topics of other dissertations thesis are:
• Influence of variable magnetic field on metabolism and induction of genetic changes of selected organisms with possible application in industry
• Molecular detection and diversity of viral pathogens in wild plant species across agroecological interfaces
• *In vitro* plant culture technologies usable for the production of special products
• Innovative diagnostics of viral pathogens attacking legumes
• Functional analysis of the dehydrin gene from *Quercus robur* L. in the context of abiotic stress
• Molecular epidemiology of viral pathogens of economically important fruit vegetables and their effective diagnosis
• Defense potential of (1-3) (1-4) -beta-D-glucan in oat (*Avena sativa* L.)

Dissertation supervisors:
Assoc. Prof. Ing. Jana Moravčíková, PhD.
Assoc. Prof. Ing. Tibor Maliar, PhD.
Assoc. Prof. Mgr. Daniel Mihálik, PhD.
Assoc. Prof. RNDr. Michaela Havrlentová, PhD.
Assoc. Prof. RNDr. Miroslav Ondrejovič, PhD.
prof. RNDr. Ján Kraic, PhD.
RNDr. Daniela Ondrejovič Chmelová, PhD.

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

Assoc. Prof. Ing. Ildikó Matušíková, PhD.
Ing. Miroslav Glasa, DrSc.

https://katedra-biotechnologii.webnode.sk/informacie-pre-studentov/doktorandske-studium/doktorandi-kbt-fpv/

f) Reference to the research/art/teacher profiles of the supervisors of final theses.
https://katedra-biotechnologii.webnode.sk/struktura-katedry-biotechnologii/vedecko-vyskumna-charakteristika-pedagogov-kbt/
http://fpv.ucm.sk/sk/pracovnici-bt.html

g) Student representatives representing the interests of students of the study programme (name and contact details).
RNDr. Šarlota Kaňuková (sarlota.kanukova@gmail.com)

http://fpv.ucm.sk/sk/o-nas/system-kvality-fakulty.html?layout=edit&id=243

h) Study advisor of the study programme (indicating contact details and information on the access to counselling and on the schedule of consultations).
RNDr. Daniela Ondrejovič Chmelová, PhD. e-mail: daniela.ondrejovic.chmelova@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 counsellor, administration, accommodation department, etc. (with contact details).
Study Department of the Faculty of Natural Sciences
PhDr. Soňa Svetíková, PhD. e-mail: sona.svetlikova@ucm.sk

Head of the UCM Student Home:
Mgr. Soňa Krahulcová e-mail: sona.krahulcova@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 centres, training schools, classroom-training facilities, sports halls, swimming pools, sports grounds).
The pedagogical process of the doctoral study program in biotechnology is carried out in classrooms in the UCM central buildings on J. Herdu Square, on Hajdóczyho Street and in the UCM building in Špačince (4 km from the University address in Trnava), where suitable rooms for lectures and seminars are available. All classrooms are equipped with video projection technology. Laboratories used for teaching laboratory exercises at the Department of Biotechnology (separation methods, enzymology, biology, advanced biology) are equipped with basic tools (chemicals, laboratory glassware, scales, small laboratory equipment) needed for each exercise.
http://fpv.ucm.sk/sk/o-nas/fakulta-v-obrazoch.html
The laboratories in which the research activity is carried out have the following equipment:
Equipment for all work in the field of fermentation technologies, protein biochemistry (isolation and characterization) and molecular biology (cloning, gene expression, mutagenesis, bioinformatics analysis). State-of-the-art instrumentation and computer technology is also available. Examples are BIOSTAT A plus Sartorius fermenter, comfort thermomixer, IKA MS3 BASIC, Bandelin Sonopuls UW 2200 sonicator, Astell autoclave, microscopes, Biotek El800 and MRX / (Dynex) microplate counters, HPLC (Waters, Pye Unicam, Young Lin and Philips with UV / Vis and DAD detectors, Shimadzu FTIR-8000 infrared spectrophotometer Shimadzu, CHNS / O Elemental Analyzer FLASH EA2000, UV-Vis spectrophotometers VARIAN CARY 50 and M350 Camspec, laboratory centrifuge UNIVERSAL 320 R, orbital shaker PSU-20 (Biosan), ES-20 environmental shaker, Buchi vacuum evaporators, HETTICH UNIVERSAL 32 centrifuge, HETTICH MIKRO 22 R refrigerated centrifuge, Eppendorf Minispin microcentrifuge, HOEFER SE 245 electrophoresis, MPLC preparative chromatography system (also gradient) laboratory Flow and PCR boxes centrifuges, thermostats, apparatus for agarose and polyacrylamide gels, shakers, DGGE) and has the extensive software needed for bioinformatics research.

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.).
Every student of the faculty has secure internet access. ANS UCM students have the opportunity to work in computer laboratories outside the program-organized training according to their own interests and the needs of solving tasks from seminars and exercises. They have computer classrooms with computers connected to the Internet and an internet room with free access with adequate software in the main UCM buildings. Another terminal classroom is in the premises of ANS UCM in Špačince.
Computer classrooms are periodically supplemented with more powerful computers and new computer and chemical software (Dragon 6, IBM SPSS Statistics 19, Analysis, QC Expert 3.1, Statistica 10.2 Base and Statistica 10.2 DataMiner). All teachers as well as internal doctoral students have an assigned computer connected to the Internet. The faculty uses the Academic Information System (AIS2).

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 - cooperating workplace, performance of experimental activities of part of dissertations focused on plant and pharmaceutical biotechnologies
National Agricultural and Food Centre, Research Institute of Plant Production, Piešťany - cooperating workplace, performance of experimental activities of part of dissertations focused on plant biotechnologies
National Agricultural and Food Centre, Research Institute of Animal Production, Nitra - cooperating workplace, performance of experimental activities of part of dissertations focused on animal biotechnologies

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Research Institute of Brewing and Malting, Prague, Czech Republic - cooperation within foreign projects, cooperation within dissertations
International Laser Centre, Bratislava - cooperating workplace, performance of experimental activities of part of dissertations
ICARST, n.o., Bratislava - joint laboratory in the building in Špačince, ANS, UCM

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 (https://www.ucm.sk/sk/sportove-a-kulturne-aktivity-studentov/).
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.
http://fpv.ucm.sk/sk/studium/studijne-pobyty.html
The system of allocating places within the ERASMUS + program takes place in the form of a selection procedure at the faculty.
Smernica o administrácii programu Erasmus+ (effective from June, 1, 2021)
The rules for the recognition of this education are governed by the UCM Study Regulations and the document
Smernica o uznávaní absolvovaných predmetov (effective from May, 1, 2021)

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.
Poriadok prijímacieho konania UCM (effective from September, 1, 2021)
Študijný poriadok UCM v Trnave (effective from September, 1, 2020, with the exception of § 28 par. 3, which enters into force on 28 April 2020)
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.

Poriadok prijímacieho konania UCM (effective from September, 1, 2021)
The admission procedure at FNS UCM is carried out in accordance with Act no. 131/2002 Coll. on Higher Education Institutions and on Amendments to Certain Acts, Sections 56 to 58. The admission process will enable an applicant who proves the fulfilment of the specified conditions for admission to study to become a student of the chosen study program. An applicant who does not prove the fulfilment of the basic conditions for admission to the study at the time of verification of the fulfilment of the conditions for admission may be admitted to the study conditionally if he/she is obliged to prove the fulfilment of the basic conditions of admission to the study no later than on the day determined for enrolment.
The method of admission is governed by the general conditions approved by the academic senate of the faculty for the relevant academic year, which must be published together with the offer of study programs and the planned number of admitted applicants no later than September 20 of the academic year preceding the academic year. candidate accepted. General conditions of admission to study in accordance with Act no. 131/2002 Coll. about universities and university duties are published on the website of the faculty and university.
Applications for university studies are accepted by the deadline, which is usually published, usually by the end of April of the respective academic year.
Applicants apply for the topics listed, which are published on the faculty's website. During the admission to doctoral studies, there will be an admission interview, which takes place in the form of an interview, where the applicant presents his/her motives, a project on the topic of the dissertation and prerequisites for study, as well as knowledge of a foreign language.

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

Academic year	Study program	Number of applications	Admissions	Enrolment/Registration
2018/2019	Biotechnology	4	4	4
2019/2020	Biotechnology	3	3	3
2020/2021	Biotechnology	5	4	4

The outline description of the study programme is used to process Annex 2 of the application for granting the accreditation of the study programme.

a) Feedback on the quality of provided education

b) 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
Smernica o hodnotení tvorivej činnosti na UCM (effective from July, 1, 2021)

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).
Získavanie relevantnej spätnej väzby od zainteresovaných strán (effective from May, 1, 2021)

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.

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

Monitoring and evaluating the quality of information and promotion is a key area for eliminating information inequalities and raising the profile of the faculty and its study programmes among students, applicants, teachers, employers and other members of the public. Evaluation is carried out through a comprehensive report or through a quality measurement and evaluation information system.
The risk of dropping out for students who do not acquire the necessary knowledge, skills and abilities during their studies:

- **risk of insufficient understanding of the subject (insufficient preparation from previous studies, lack of understanding of the connection with the subject of the prerequisite, student passivity...)**
- **risk of insufficient scope of understanding,**
- **risk of unequal treatment of students,**
- **risk of inappropriate choice of the study programme by the student in terms of his/her abilities and interests,**
- **risk of lack of employability of graduates in practice.**

Ways the faculty will eliminate these risks:

- **individual approach to students,**
- **assigning appropriate tasks and projects to support the active work of each student in seminars and workshops,**
- **offer of consultation hours,**
- **small groups for exercises,**
- **an offer of compulsory optional subjects fixing the substance to be taken over,**
- **incentive scholarship for excellent fulfilment of study obligations,**
- **the effective application of the above guidelines in the study program will also contribute to eliminating the risks.**

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

The feedback results are published in the ANS Quality Report. The report contains an evaluation of the questionnaire surveys as well as proposed measures to eliminate the shortcomings.
http://fpv.ucm.sk/sk/o-nas/system-kvality-fakulty.html
The evaluation of the new study program is here:
https://katedra-biotechnologii.webnode.sk/informacie-pre-studentov/dokumenty/monitoring-kvality-sp/

10.) References to other relevant internal regulations and information concerning the study or the study programme student

a) study guide

ANS study schedule for the academic year 2020/2021 http://fpv.ucm.sk/sk/studium.html

b) accommodation regulations

Accommodation regulations of the UCM student dormitory Ubytovací poriadok študentského domova UCM (effective from September, 1, 2021

c) fee directive

Directive on tuition fees and fees associated with the UCM study Smernica o školnom a poplatkoch spojených so štúdiom UCM (effective from November, 1, 2020)

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