

## **Description of the study programme Microbiology in the third level in part-time of study in Slovak language**

**The name of the university:**

**University of Veterinary Medicine and Pharmacy in Košice**

**The seat of the college:**

**Komenského 73, 041 81 Košice**

**College identification number:**

**00397474**

The college's authority to approve of the study programme:

Accreditation Committee of UVMP in Košice

Date of approval or modification of the study programme:

26. 8. 2022

Date of the last change to the study programme description:

25. 8. 2022

Decision No. 2016-26493/51984:2-15A0 of 20 December 2016. Grants the right without time limitation

ID of the proceeding: 16727

The name of the university: University of Veterinary Medicine in Košice

The name of the study programme: Microbiology

The level of the study: Level 3

Code of the study programme: 12239

### **1. Basic data about the study programme**

a) The name of the study programme and the number according to the register of study programmes:

*Microbiology* code 12239, decision number 2016-26493/51984:2-15A0

b) Level of higher education and ISCED-F code of the level of education

Level 3/864

c) Venue of study programme:

The University of Veterinary Medicine in Košice, Komenského 73, 041 81 Košice

d) The field of study in which a higher education is obtained by completing the study programme, or a combination of two study fields in which a higher education is obtained by completing the study programme, ISCED-F code of the field:

Veterinary Medicine/0841

e) Type of study programme:

Academically oriented

f) Academic title awarded.

*Philosophiae doctor* (abbreviated PhD.)

g) Form of study:

Part-time

- h) The language in which the study programme is conducted:  
Slovak language
- i) Standard length of study expressed in academic years:  
5 academic years
- j) Capacity of the study programme: planned number of students - according to the topics of dissertations, actual number of applicants in the last 6 years (from the academic year 2016/2017 to the academic year 2021/2022: 1 topics; number of applicants enrolled: 1; number of applicants enrolled and admitted: 1; number of PhD studies graduates in the last 6 years: 2
- k) Information about the study programme:  
[https://qa.uvlf.sk/sprg\\_info/?sprg\\_id=66&ar=20222023](https://qa.uvlf.sk/sprg_info/?sprg_id=66&ar=20222023)

## 2. Graduate profile and learning objectives

- a) The learning objectives achieved in the *Microbiology* study programme are methodologically based on the European Qualifications Framework for Lifelong Learning (EQF). This defines the requirements for learning outcomes for knowledge, skills, responsibility and autonomy.

For level 8, the required learning outcomes are “*highly specialised knowledge, some of which is at the forefront of the field of work or study*“.

The core knowledge is provided on core courses in the field of bacteriology, virology, clinical microbiology, molecular biology and genetics of microorganisms, which are described in the syllabi as learning outcomes. Additional knowledge is achieved by completing compulsory optional courses of the study programme in the field of food microbiology, general immunology, epidemiology, basic genetic engineering and bioinformatics.

The graduate has extensive professional knowledge in several areas of the study programme or field, which is used as a basis for research and development in microbiology. The studies focus on acquiring the latest theoretical knowledge based on the current state of scientific knowledge in individual areas of microbiology.

The study builds on the knowledge acquired through second-level higher education at veterinary and medical faculties (universities), pharmaceutical faculties, natural sciences faculties or other faculties of medicine and natural sciences. Education in level 3 of higher education focuses on theoretical, applied and clinical microbiology, which includes: viruses, bacteria and microscopic fungi. Particular attention is paid to the study of the variability of viruses, bacteria, microscopic fungi, specifically their physiological and pathological role in the human and animal organism, but also in terms of horizontal transfer of genetic information (conjugation, transformation and transduction), resistance to antimicrobial agents and survival in the ecosystem. It focuses on the acquisition of the latest theoretical and practical knowledge in the study of the causative agents of new and re-emerging diseases of viral and bacterial origin, as well as in the study of health-promoting bacteria or their communities.

For level 8, the *most advanced and specialised skills and techniques, including the ability to synthesise and evaluate, are required to solve fundamental problems in research, are also needed in innovation and to extend and redefine existing knowledge on the subject*'.

A graduate of the *Microbiology* study programme is qualified to work as a microbiology expert. He/she is proficient in scientific research methods in the field of experimental and clinical microbiology, which he/she creatively implements on various model objects (cell cultures and laboratory animals). The graduate can use statistical and bioinformatics methods as well as other knowledge from related disciplines.

The graduate is able to investigate the properties of microorganisms (morphological, cultural, metabolic, biochemical, molecular-biological and others), as well as different levels of their interrelationships with the host (commensal, mutualist, facultative pathogen and pathogen), using progressive methodological approaches in order to gain new, previously unpublished knowledge. The graduate is technically proficient not only in routine laboratory procedures, but also in working with the software-intensive instrumentation of the bacteriology and virology laboratory. He/she is able to formulate scientific problems, conduct creative and independent research and independently present the results of his/her work in internationally accepted journals or present them at scientific events. The results of creative experimental work not only contribute to the development of science and scientific knowledge, but these can also be used in human and veterinary medicine, agriculture, pharmacology and the protection of the gene pools of animals and man himself.

Responsibility and autonomy, defined for Level 8, is *"the ability to demonstrate considerable authority, innovation, independence, scholarly and professional integrity, and a sustained commitment to developing new ideas or practices that are at the forefront of a given work or learning environment, including research."*

The graduate is characterized by independent, critical and analytical thinking. He/she takes into account social, scientific and ethical aspects when formulating research intentions and interpreting research results. The results of his/her own creative work contribute to the development of science, scientific knowledge and the usage of acquired knowledge in practice. He/she presents the results of research and development independently to the professional community and is able to determine the focus of research and coordinate a team in the relevant study programme. The graduate is able to independently design, validate and implement new research and working practices based on their outputs and findings.

- b) The graduate of the *Microbiology* study programme can work as a microbiologist - expert in basic and applied research of microbiological focus in the health, agriculture, environment, defence and interior ministries.
- c) Relevant external interested parties who have provided a statement or a favourable opinion on the compliance of the acquired qualification with the sector-specific requirements of the profession: Institute of Animal Physiology, Centre of Biosciences, Slovak Academy of Sciences - [https://qa.uvlf.sk/vsk/docs/vzs\\_mikro\\_sav.pdf](https://qa.uvlf.sk/vsk/docs/vzs_mikro_sav.pdf)

### **3. Job prospects**

- a) On the basis of previous long experience with graduates of the *Microbiology* study programme, it can be stated that graduates find employment at all universities where microbiology is taught as a biological discipline, as well as at research institutes, where theoretical and practical aspects of microbial processes are addressed (genetic determination, various manifestations and the impact on the organism, especially in the case of infectious diseases, in particular of bacterial and viral origin). The graduate can work at the ministries of health, agriculture, environment, defence and interior, especially in laboratories dealing with microorganisms as inhabitants of the ecosystem, as infectious agents, as causative agents of zoonoses, epizootics and part of biological threats, but also as organisms used in the food, feed and pharmaceutical industries and in wastewater treatment.
- b) Examples of successful graduates of the study programme:  
RNDr. Jana Mašlanková, PhD., MVDr. Vanda Holovská, PhD., MUDr. Eva Schréterová, PhD. a PharmDr. Monika Fedorová, PhD.

- c) Evaluation of the quality of the study programme by employers (feedback): the UVMP has prepared questionnaires on graduates for employers.

#### **4. Structure and content of the study programme**

- a) The rules for the formation of study plans in the study programme Microbiology are based on the general provisions contained in Article 8 of the internal regulation [Study Guidelines of the UVMP](#), Part B.

- b) The recommended framework study plan for part-time:  
[https://qa.uvlf.sk/ais/sp/?ar=2022-2023&sprg\\_id=66](https://qa.uvlf.sk/ais/sp/?ar=2022-2023&sprg_id=66)

The dissertation examination may be taken by a student who has achieved 50 credits for five CSs and at least 10 credits for two selected OCSs during the study period, no later than 24 months from the start of the PhD studies. A minimum of 240 credits is required for graduation.

- c) The study plan includes:
- listed individual parts of the study programme (compulsory courses and compulsory optional courses),
  - profile subjects are marked in bold and with an asterisk in the study plan,
  - for each educational part (course), the learning outcomes and the related criteria and rules for their assessment are defined in the information sheet of course so that all the educational objectives of the study programme are met,
  - for each educational part of the study plan (course), the course information sheet sets out the learning activities used that are suitable for achieving the learning outcomes,
  - the course information sheet lists the methods by which the learning activity is carried out,
  - the course information sheet lists the course syllabus,
  - the course information sheet lists the student's workload,
  - the credits allocated to each section based on the learning outcomes achieved and the associated workload,
  - the course guarantor is identified and the course information sheets, if applicable, also identify other persons providing the courses,
  - the place of providing of the course (if the programme of study is delivered at more than one site).

**The course information sheets for the Microbiology are available via links directly in the study plan:**

[https://qa.uvlf.sk/ais/sp/?ar=2022-2023&sprg\\_id=66](https://qa.uvlf.sk/ais/sp/?ar=2022-2023&sprg_id=66)

- d) The number of credits which must be earned to complete the study and other conditions that the student must fulfill to graduate, including the conditions of state exams, rules for retaking courses and rules for extension, interruption of studies:  
The condition for the proper completion of studies is obtaining 240 credits, which include credits for passing the dissertation examination and defending the dissertation. Other conditions that the student must fulfill to complete the studies, including the conditions of state exams, rules for retaking courses and rules for extension, interruption of studies are listed in Articles 2, 15, 18, 19 and 29 of the [Study Guidelines of the UVMP](#), Part B.
- e) Conditions for passing individual parts of the study programme and the student's progress in the study programme :

- number of credits per core courses required for proper completion of the studies/completion of part of the study : 50
  - number of credits for compulsory courses required for proper completion of the studies/completion of part of the study : 10,
  - number of credits for the dissertation examination: 20
  - number of credits for the defence of the dissertation thesis required for proper completion of studies: 30
- f) Rules regarding student evaluation and the possibility of repeating exams:  
UVMP in Košice has described the rules regarding student evaluation and the possibility of repeating exams in Articles 17, 18 and 25 of the [Study Guidelines of the UVMP](#), Part B.
- g) Conditions for the recognition of studies or part of studies:  
UVMP in Košice addresses the conditions for recognition of studies or parts of studies in Articles 19, 38 and 42 of the [Study Guidelines of the UVMP](#), Part B.
- h) Topics of the PhD theses of the study programme:

<i>Name of the topic of the dissertation in part-time form in Slovak language</i>	<i>AY</i>	<i>Topics</i>
Faktory virulencie Staphylococcus aureus	2000/2001	+
Vplyv xenobiótik na eukaryotické a prokaryotické bunky a nebunkové organizmy	2001/2002	+
Burkholderia cepacia komplex u pacientov s cystickou fibrózou	2001/2002	+
Úloha chemokínu CXCL10 pri demencii asociovanej s HIV infekciou	2001/2002	+
Genotyp hovädzieho dobytku vo vzťahu k paratuberkulóze	2003/2004	+
Úloha metalobetalaktamáz pseudomonas aeruginosa pri rezistencii na karbapenémové antibiotiká	2006/2007	+
In vitro antifungálna účinnosť vybraných fytotherapeutík	2008/2009	+
Diferenciálna diagnostika druhov rodu Malassezia molekulovo biologickými metódami	2009/2010	+
Syndróm neuroinvázií zoonóz vo vzťahu k antigénnej diverzite a rýchlej diferenciálnej diagnostike	2012/2013	+
Charakteristika imunofarmakologického účinku látok s potencujúcim účinkom na probiotiká	2012/2013	+
Mikrobiologická analýza orálnej mikroflóry z pohľadu zubného lekárstva vo veterinárnej a ľudskej medicíne	2016/2017	+

- i) UVMP in Košice has laid down:
- the rules for assigning, processing, opposing, defending and evaluating dissertation theses in Articles 1, 8, 9, 10, 25, 26, 27 and 28 of the [Study Guidelines of the UVMP](#), Part B,
  - possibilities and procedures for participation in student mobility in Article 42 of the internal regulation [Study Guidelines of the UVMP](#), Part B,
  - Code of Academic Ethics in the internal regulation [Disciplinary Procedure for Students](#), in the internal regulation UVMP Employee [Code of ethics for employees of the UVMP](#) and in the internal regulation [Student code of ethics at the UVMP](#),
  - procedures applicable to students with special needs in Part II, Article 2, point 7; Article 3, point 12 of the [Study Guidelines of the UVMP](#), Part B,
  - the procedures for filing complaints and appeals by the student are specified, in addition to the Study Regulations of UVMP in Košice, in particular in the internal regulation [Directive on the handling of complaints at the UVMP](#).

## 5. Information sheets of study programme courses

The information sheets of individual courses of the study programme have the structure established by the Decree of the Ministry of Education of the Slovak Republic No. 614/2002 Coll., as amended.

## 6. Current academic year schedule and current timetable

The current schedule of the academic year and the current class schedule are listed in the bulletin "Information about studying at UVMP in Košice" for the given academic year and are also available on the UVMP's website: [Study Guide Book at the UVMP for academic year 2022/2023](#). PhD students study according to an individual study plan drawn up by the supervisor and the PhD student and approved by the person with the main responsibility for the implementation, development and quality assurance of the study programme.

## 7. Staff

- a) The person responsible for the implementation, development and quality of the study programme is Prof. Emil Pilipčinec, DVM PhD., who is a tenured professor; working at the Department of Microbiology and Immunology, UVMP in Košice; e-mail [emil.pilipcinec@uvlf.sk](mailto:emil.pilipcinec@uvlf.sk); mobile +421905899434.
- b) List of persons teaching core courses of the study programme:  
Prof. Juraj Pisl, DVM PhD.; Department of Microbiology and Immunology  
Assoc. Prof. Jana Koščová, DVM PhD.; Department of Microbiology and Immunology  
doc. MVDr. Tomáš, Csank, PhD.; Department of Microbiology and Immunology  
Assoc. Prof. Anna Jacková, DVM PhD.; Department of Epidemiology, Parasitology and Protection of Common Health.
- c) Scientific/artistic/pedagogical characteristics of persons providing profile subjects of the study programme are available on the quality portal of UVMP in Košice and direct links are given in Annex 1 of the internal evaluation report.
- d) List of teachers of the study programme with assignment to the course and link to the central register of university staff, with contact details:

<i>Teacher</i>	<i>Course</i>	<i>e-mail</i>	<i>mobile</i>	<i>CRZ</i>
<i>Profile courses</i>				
<b>Prof. Emil Pilipčinec, DVM PhD.</b>	<b>Bacteriology</b>	<a href="mailto:emil.pilipcinec@uvlf.sk">emil.pilipcinec@uvlf.sk</a>	+421905899434	<a href="https://www.portalvs.sk/regzam/detail/5988">https://www.portalvs.sk/regzam/detail/5988</a>
<b>Assoc. Prof. Tomáš Csank, DVM PhD.</b>		<a href="mailto:tomas.csank@uvlf.sk">tomas.csank@uvlf.sk</a>	+421905480897	<a href="https://www.portalvs.sk/regzam/detail/6133">https://www.portalvs.sk/regzam/detail/6133</a>
<b>Assoc. Prof. Jana Koščová, DVM PhD.</b>		<a href="mailto:jana.koscova@uvlf.sk">jana.koscova@uvlf.sk</a>	+421905480897	<a href="https://www.portalvs.sk/regzam/detail/6093">https://www.portalvs.sk/regzam/detail/6093</a>
<b>Prof. Juraj Pisl, DVM PhD.</b>	<b>Virology</b>	<a href="mailto:juraj.pisl@uvlf.sk">juraj.pisl@uvlf.sk</a>	+421915984588	<a href="https://www.portalvs.sk/regzam/detail/5981">https://www.portalvs.sk/regzam/detail/5981</a>
<b>Assoc. Prof. Tomáš Csank, DVM PhD.</b>		<a href="mailto:tomas.csank@uvlf.sk">tomas.csank@uvlf.sk</a>	+421905480897	<a href="https://www.portalvs.sk/regzam/detail/6133">https://www.portalvs.sk/regzam/detail/6133</a>
<b>Assoc. Prof. Jana Koščová, DVM PhD.</b>		<a href="mailto:jana.koscova@uvlf.sk">jana.koscova@uvlf.sk</a>	+421905480897	<a href="https://www.portalvs.sk/regzam/detail/6093">https://www.portalvs.sk/regzam/detail/6093</a>



Assoc. Prof. Jana Koščová, DVM PhD.	Clinical microbiology	<a href="mailto:jana.koscova@uvlf.sk">jana.koscova@uvlf.sk</a>	+421905480897	<a href="https://www.portalvs.sk/regzam/detail/6093">https://www.portalvs.sk/regzam/detail/6093</a>
Assoc. Prof. Anna Jacková, DVM PhD.	Molecular biology	<a href="mailto:anna.jackova@uvlf.sk">anna.jackova@uvlf.sk</a>	+421915984648	<a href="https://www.portalvs.sk/regzam/detail/6087">https://www.portalvs.sk/regzam/detail/6087</a>
Assoc. Prof. Tomáš Csank, DVM PhD.	Genetics of microorganis ms	<a href="mailto:tomas.csank@uvlf.sk">tomas.csank@uvlf.sk</a>	+421918637645	<a href="https://www.portalvs.sk/regzam/detail/6133">https://www.portalvs.sk/regzam/detail/6133</a>
<b>Compulsory optional courses</b>				
doc. MVDr. Monika Píповá, PhD.	Food microbiology	<a href="mailto:monika.pipova@uvlf.sk">monika.pipova@uvlf.sk</a>	+421915984562	<a href="https://www.portalvs.sk/regzam/detail/6030">https://www.portalvs.sk/regzam/detail/6030</a>
prof. MVDr. Ľudmila Tkáčiková, PhD.	Special immunology	<a href="mailto:ludmila.tkacikova@uvlf.sk">ludmila.tkacikova@uvlf.sk</a>	+421915984603	<a href="https://www.portalvs.sk/regzam/detail/5991">https://www.portalvs.sk/regzam/detail/5991</a>
Assoc. Prof. Dagmar Mudroňová, DVM PhD.		<a href="mailto:dagmar.mudronova@uvlf.sk">dagmar.mudronova@uvlf.sk</a>	+421915986954	<a href="https://www.portalvs.sk/regzam/detail/6094">https://www.portalvs.sk/regzam/detail/6094</a>
prof. MVDr. Anna Ondrejková, PhD.	Epizootology	<a href="mailto:anna.ondrejкова@uvlf.sk">anna.ondrejková@uvlf.sk</a>	+421915984647	<a href="https://www.portalvs.sk/regzam/detail/2007">https://www.portalvs.sk/regzam/detail/2007</a>
Assoc. Prof. Ľuboš Korytár, DVM PhD.		<a href="mailto:lubos.korytar@uvlf.sk">lubos.korytar@uvlf.sk</a>	+421915976107	<a href="https://www.portalvs.sk/regzam/detail/20446">https://www.portalvs.sk/regzam/detail/20446</a>
doc. MVDr. Lenka Luptáková, PhD.	Fundamentals of genetic engineering	<a href="mailto:lenka.luptakova@uvlf.sk">lenka.luptakova@uvlf.sk</a>	+421918919686	<a href="https://www.portalvs.sk/regzam/detail/6111">https://www.portalvs.sk/regzam/detail/6111</a>
Assoc. Prof. Mangesh Bhide, MVSc. PhD.	Bioinformatics	<a href="mailto:bhidemangesh@gmail.com">bhidemangesh@gmail.com</a>	+421915984604	<a href="https://www.portalvs.sk/regzam/detail/6102">https://www.portalvs.sk/regzam/detail/6102</a>

e) List of thesis supervisors with assignment to topics (with contact details):

<b>Dissertation topic</b>	<b>Supervisor</b>	<b>Contact</b>
Úloha metalobetalaktamáz pseudomonas aeruginosa pri rezistencii na karbapenémové antibiotiká	prof. MVDr. Vladimír Kmet', DrSc.	<a href="mailto:kmetv@saske.sk">kmetv@saske.sk</a>
Vplyv xenobiót na eukaryotické a prokaryotické bunky a nebunkové organizmy Syndróm neuroinvasívnych zoonóz vo vzťahu k antigénnej diverzite a rýchlej diferenciálnej diagnostike Charakteristika imunofarmakologického účinku látok s potencujúcim účinkom na probiotiká	prof. MVDr. Juraj Pístl, PhD.	<a href="mailto:juraj.pistl@uvlf.sk">juraj.pistl@uvlf.sk</a>
Burkholderia cepacia komplex u pacientov s cystickou fibrózou Genotyp hovädzieho dobytku vo vzťahu k paratuberkulóze	prof. MVDr. Ivan Mikula, DrSc.	
Úloha chemokínu CXCL10 pri demencii asociovanej s HIV infekciou	prof. MVDr. Emil Pilipčinec, PhD.	<a href="mailto:emil.pilipcinec@uvlf.sk">emil.pilipcinec@uvlf.sk</a>
Diferenciálna diagnostika druhov rodu Malassezia molekulovo biologickými metódami	doc. RNDr. Emil Holoda, CSc.	

Mikrobiologická analýza orálnej mikroflóry z pohľadu zubného lekárstva vo veterinárnej a humánnej medicíne	doc. MVDr. Radomíra Nemcová, PhD.	
Faktory virulencie Staphylococcus aureus	doc. MVDr. Ludmila Tkáčiková, PhD.	<a href="mailto:ludmila.tkacikova@uvlf.sk">ludmila.tkacikova@uvlf.sk</a>
In vitro antifungálna účinnosť vybraných fytoterapeutík	doc. MVDr. Eva Čonková, PhD.	<a href="mailto:eva.conkova@uvlf.sk">eva.conkova@uvlf.sk</a>

- f) Supervisors of PhD students are university teachers in the position of professor and associate professor in the relevant field of study, scientists with scientific qualification degree I and IIa and other distinguished experts from the Slovak Academy of Sciences. The supervisors are approved by Scientific Board of UVMP. Scientific and pedagogical characteristics of thesis supervisors are available on the quality portal of UVMP in Košice through the study plan or directly at <https://qa.uvlf.sk/vupch-viewer/?regzam=X> where X is the employee number on the HE Portal (e.g.. <https://www.portalvs.sk/regzam/detail/5988> - Employee record on the University portal, <https://qa.uvlf.sk/vupch-viewer/?regzam=5988> - VUPCH employee on the quality portal of UVMP in Košice).
- g) Student representatives who represent the interests of PhD students (name and contact details):  
The member of the study programme committee were the students of veterinary medicine Marek Ratvay, DVM e-mail: [marek.ratvay@student.uvlf.sk](mailto:marek.ratvay@student.uvlf.sk); Teodora Blatníková, DVM e-mail: [teodora.blatnikova@student.uvlf.sk](mailto:teodora.blatnikova@student.uvlf.sk); Pavel Gomulec, DVM e-mail: [pavel.gomulec@student.uvlf.sk](mailto:pavel.gomulec@student.uvlf.sk)
- h) Study programme advisor: vice-rector for research and PhD studies at UVMP in Košice
- i) Other study programme support staff - assigned study officer: Júlia Jančura, Mgr. e-mail [julia.jancura@uvlf.sk](mailto:julia.jancura@uvlf.sk); career counsellor: the position of the career counsellor is performed by the PhD student's supervisor.

## 8. Premises, tools and technical equipment

- a) List and characteristics of the study programme classrooms and their technical equipment with assignment to learning outcomes and course matter:

Course	Characteristics of material and technical equipment	Pavilion number and room designation
Bacteriology	Material and equipment for bacteriological and virological diagnostics and molecular biology: Thermostats, autoclaves, refrigerators, BSL2 laminar boxes, PCR boxes, conventional and refrigerated benchtop centrifuges, benchtop ultracentrifuge, thermocyclers for PCR and qPCR, Synergy 2 multidetection equipment, light inverted microscopes, Axio Observer fluorescence microscope (Zeiss) extended with Apotome 3 (Zeiss), technical extension of the Axio Observer microscope for "live cell imaging", CO <sub>2</sub> incubator, electrophoretic apparatus, deep freezing boxes, isolates for gnotobiotic animals	P3 Workplace Pri hati 10
Virology	Material and equipment for bacteriological and virological diagnostics and molecular biology: Thermostats, autoclaves, refrigerators, BSL2 laminar boxes, PCR boxes, conventional and refrigerated benchtop centrifuges, benchtop ultracentrifuge, thermocyclers for PCR and qPCR, Synergy 2 multidetection equipment, light inverted microscopes, Axio Observer fluorescence microscope (Zeiss) extended with Apotome 3	P3 Workplace Pri hati 10



	(Zeiss), technical extension of the Axio Observer microscope for "live cell imaging", CO <sub>2</sub> incubator, electrophoretic apparatus, deep freezing boxes, isolates for gnotobiotic animals	
Clinical microbiology	Material and equipment for bacteriological and virological diagnostics and molecular biology: Thermostats, autoclaves, refrigerators, BSL2 laminar boxes, PCR boxes, conventional and refrigerated benchtop centrifuges, benchtop ultracentrifuge, thermocyclers for PCR and qPCR, Synergy 2 multidetection equipment, light inverted microscopes, Axio Observer fluorescence microscope (Zeiss) extended with Apotome 3 (Zeiss), technical extension of the Axio Observer microscope for "live cell imaging", CO <sub>2</sub> incubator, electrophoretic apparatus, deep freezing boxes, isolates for gnotobiotic animals	P3 Workplace Pri hati 10
Molecular biology	Materials and equipment for molecular genetic laboratory diagnostics and molecular biology: deep freezers, refrigerators, freezers, BSL2 laminar boxes, PCR boxes, refrigerated centrifuges, robotic nucleic acid isolator, PCR thermocyclers, real-time PCR thermocyclers, digital droplet PCR, electrophoretic apparatus, automated imaging and documentation system, automated chip electrophoresis, micro-volume spectrophotometer, microcentrifuges, vortexes, thermoblocks, bioinformatics software	P1
Genetics of microorganisms	Material and equipment for bacteriological and virological diagnostics and molecular biology: Thermostats, autoclaves, refrigerators, BSL2 laminar boxes, PCR boxes, conventional and refrigerated benchtop centrifuges, benchtop ultracentrifuge, thermocyclers for PCR and qPCR, Synergy 2 multidetection equipment, light inverted microscopes, Axio Observer fluorescence microscope (Zeiss) extended with Apotome 3 (Zeiss), technical extension of the Axio Observer microscope for "live cell imaging", CO <sub>2</sub> incubator, electrophoretic apparatus, deep freezing boxes, isolates for gnotobiotic animals	P3
Food microbiology	Material and equipment for bacteriological, mycological and molecular diagnostics: Thermostats, autoclaves, hot air sterilizer, refrigerators, freezers, deep freezers, BSL2 laminar boxes, PCR box, centrifuges, ultracentrifuges, gradient thermocycler for PCR, electrophoretic apparatus, photo-documentation equipment for visualization and photo-documentation of agarose gels, micro-volume spectrophotometer for DNA quantification. Spectrophotometers, pH meters, ultrasonic bath, ELISA reader, optical microscopes, digital microscopes, thin layer chromatography chamber,	P6 Microbiology and mycology laboratory at the Department of Hygiene, Technology and Health Food Safety, Nos 21 and 47
General immunology	Material and equipment for bacteriological and virological diagnostics and molecular biology: Thermostats, autoclaves, refrigerators, BSL2 laminar boxes, PCR boxes, conventional and refrigerated benchtop centrifuges, benchtop ultracentrifuge, thermocyclers for PCR and qPCR, Synergy 2 multidetection equipment, light inverted microscopes, Axio Observer fluorescence microscope (Zeiss) extended with Apotome 3 (Zeiss), technical extension of the Axio Observer microscope for "live cell imaging", CO <sub>2</sub> incubator, electrophoretic apparatus, deep freezing boxes, isolates for gnotobiotic animals	P3 Workplace Pri hati 10
Epizootology	Material and equipment for teaching epidemiology; training rooms and laboratories are equipped for the detection and study of pathogens - agents of infectious diseases (viral, bacterial and mycotic), including the conduct of epidemiological studies aimed at analysis, evaluation, modelling and forecasting in epidemiology: BSL2 laminar boxes, PCR boxes, robotic nucleic acid isolator, centrifuges and ultracentrifuge, thermocyclers for PCR, real-time PCR, digital droplet PCR, Synergy HTX multi-mode reader, ELISA reader, electrophoresis equipment, automated imaging and documentation system, automated chip	P1

	electrophoresis, deep freeze boxes, fluorescence microscope, thermostats, CO <sub>2</sub> incubators, autoclaves, refrigerators, and more.	
Fundamentals of genetic engineering	Material and equipment for molecular analyses: thermostats, autoclaves, refrigerators, freezers, boxes for DNA and RNA work, centrifuges, thermocyclers for PCR and qPCR, electrophoretic apparatus, sonifier	P1
Bioinformatics	Material - Laptop and connected to the Internet Software - Geneious pro, OManalysis, Reactome, KEGG server, NCBI server, Blast to GO,	P36

- b) Availability of study materials (access to literature in line with syllabi sheets, access to information databases and other information sources, information technologies, etc.):  
All literary resources for study outlined in the syllabi are available either in print or electronic form, all information databases purchased and licensed by the university are widely available to students.
- c) Description and scope of distance education in the study programme with per course. Access data, manuals of e-learning portals. Procedures for the transition from in-person to distance learning.  
UVMP in Košice also provides distance learning for all courses via the MOODLE and MS Teams platforms. Each student can access manuals either in electronic form or in the form of video instructions.
- d) Partners of the university in the provision of educational activities of the study programme and characteristics of their participation: Partners of the university in the provision of educational activities of the study programme and characteristics of their participation: the SAV and the ŠVPS SR, KVL.
- e) Characteristics of social, sporting, cultural, spiritual and community facilities:  
UVMP in Košice provides its students with a wide range of opportunities for all-round enjoyment in all of the above areas (a detailed description is included in the internal evaluation report).
- f) Mobility and internships opportunities (with contact details), application instructions, rules for recognizing this education:  
Students of the study programme are guaranteed the opportunity to participate in mobilities. The entire agenda containing instructions and conditions for applying for mobility, conditions and rules of participation as well as rules for recognizing mobility as part of the study plan is covered by the Vice-Rector for International Relations and Internationalisation and the organisational unit managed by her, which is the UVMP Mobility Office. The whole process requires coordination with the supervisor, and is recommended after the study part of the study plan has been completed. Participation in mobility and other contexts are regulated in Article 42 of the [Study Guidelines of the UVMP](#), Part B.

## 9. Required abilities and prerequisites of the candidate for the study programme

- a) Required competences and prerequisites for admission to study:  
They are laid down in Article 1 and Article 2, Part B, Part II Organisation of Studies of the Internal Regulations of the [Study Guidelines of the UVMP](#).
- b) Admission procedures:  
These are laid down in Article 3 and Article 4, Part B, Part II Organisation of Studies of the Internal Regulations of the [Study Guidelines of the UVMP](#). Examination boards for

admission examinations are at least 4-member and are appointed by the Rector on an ad hoc basis according to the the study programmes to which students apply.

- c) The results of the admissions procedure for the most recent period, which we consider to be the period of the standard length of study (5 academic years):  
AY 2016/2017; 1 applicant registered, 1 applicant accepted, 1 applicant enrolled and accepted,  
AY 2017/2018; 0 applicants registered,  
AY 2018/2019; 0 applicants registered,  
AY 2019/2020; 0 applicants registered,  
AY 2020/2021; 0 applicants registered.

The results of the admission procedure for the last 6 years: 1 applied applicant, 1 accepted and 3 doctoral students graduated.

#### **10. Feedback on the quality of education provided**

- a) Procedures for monitoring and evaluating students' views on the quality of the study programme:  
The students of UVMP in Košice can evaluate the quality of teaching anonymously through an anonymous questionnaire after graduation, where they evaluate the quality of a particular study programme and the quality of the lecturers who provide the course. Monitoring of study programmes is also continuously carried out by the coordinators of individual fields (5) of science and research at UVMP.
- b) Results of student feedback and related measures to improve the quality of the study programme:  
The feedback and measures to improve the quality of the study programme are part of the Annual Reports on the Educational Activity at UVMP in Košice for individual academic years and the Annual report on activities UVMP 2021 for individual academic years. As part of the measures to improve the quality of the study programme, the vice-rector for education, study advisors and coordinators of individual fields of science and research step in and address the issues resulting from the feedback.
- c) Results of alumni feedback and related measures for improving the quality of the study programme:  
The results of alumni feedback and related measures to improve the quality of the study programme are included in the Annual Reports on the Activities of UVMP in Košice and Annual Reports on the Quality of UVMP in Košice for individual academic years. As part of the study programme quality improvement, the results of graduate evaluations are discussed once a year at the relevant committee for the establishment, modification and periodic evaluation of study programmes, where individual comments and proposals for improving the quality of the study programme are discussed. From the academic year 2022/2023, the UVMP will evaluate the readiness of graduates in the form of an electronic questionnaire for employers, which is available at <https://forms.gle/z1h9u3rd2g9H589P7>.

## 11. Overview of long-term and continuous success in obtaining financial support – 10 years

P.no.	Project number	From	To	Project name	Provider	Principal Investigator / Co-Principal Investigator
1	APVV - 0199 -11	2012	2015	Use of alginite to stabilize and stimulate the effect of probiotic biopreparations in medicine and healthy nutrition	RDPA	Assoc. Prof. Radomíra Nemcová, DVM PhD.
2	1/0435/11	2011	2014	Modulation of gut biochemistry, intestinal microflora and immune response in pigs using probiotic microorganisms and flaxseed as a source of n -3 PNMK and fibre	SGA	Soňa Gancarčíková, DVM PhD.
3	1/0855/12	2012	2014	Immunomodulatory and cytotoxic effect of pesticides under conditions of viral infection	SGA	Prof. Juraj Pisl, DVM PhD.
4	1/0009/15	2015	2018	The use of gnotobiotic laboratory animals in the study of digestive tract physiology and interactions between natural microflora and digestive tract pathogens	SGA	Soňa Gancarčíková, DVM PhD.
5	APVV-15-0377	2016	2020	Synergistic effect of plant secondary metabolites and products of probiotic bacteria on the inhibition of biofilm-forming pathogens.	RDPA	Assoc. Prof. Radomíra Nemcová, DVM PhD.
6	1/0081/17	2017	2020	Study of the effect of beneficial microorganisms and their bioactive products on the inhibition of biofilm-forming pathogens.	SGA	Assoc. Prof. Radomíra Nemcová, DVM PhD.
7	APVV-16-0176	2017	2021	Targeted modulation of the gut microbiota and its transplantation in the prevention and therapy of intestinal inflammatory diseases.	RDPA	Soňa Gancarčíková, DVM PhD.
8	APVV-16-0171	2017	2020	Progressive methods to prevent the emergence and spread of bacterial resistance to clinically relevant antibiotics	RDPA	Assoc. Prof. Jana Koščová, DVM PhD.
9	1/0788/19	2019	2022	Study of changes in the microflora of dental biofilms in humans and dogs to harmonize the oral microbiocenosis using selected oral probiotics	SGA	Marián Maďar, DVM PhD.
10	APVV-20-0114	2021	2025	Sex-specific microbiome and gene-gene interactions in the pathogenesis of behavioral and gastrointestinal symptoms in an animal model of autism spectrum disorders.	RDPA	Soňa Gancarčíková, DVM PhD.
11	1/0015/21	2021	2024	Gnotobiotic laboratory animals associated with human microbiota in the study of prevention and therapy of inflammatory bowel disease (IBD).	SGA	Soňa Gancarčíková, DVM PhD.
12	1/0354/21	2021	2024	Study of replication, neurovirulent potential and innate antiviral response to tick-borne orbiviruses in host cell models	SGA	Assoc. Prof. Tomáš Csank, DVM PhD.

13      1/0731/21      2021      2024      Substances of natural origin as part of sustainable aquaculture      SGA      Assoc. Prof. Jana Koščová, DVM PhD.

**12. Links to other relevant internal regulations and information regarding the study or the student of the study programme:**

[Study Guide Book at the UVMP for academic year 2022-2023](#)

[Directive on support of students and applicants to study with specific needs at the UVMP](#)

[Study guidelines of UVMP in Košice](#)

[Annual report on activities UVMP 2021](#)