

Study programme description

Name of the higher education institution: Comenius University in Bratislava

Address of the higher education institution: Šafárikovo námestie 6, 814 99 Bratislava

Identification number of the higher education institution: 00397865

Name of the faculty: FACULTY OF MEDICINE

Address of the faculty: Špitálska 24, 813 72 Bratislava 1

University body for the approval of the study programme: Provisional Accreditation board of the Faculty of Medicine, Comenius University in Bratislava and Provisional Accreditation Board of the Comenius University in Bratislava.

Date of Approval of the study programme or adjustment of the study programme: March 29, 2021

The date of last change in the study programme description: does not apply

Reference to the results of the last periodic assessment of the study programme by the university: does not apply

Reference to assessment report to the application for accreditation of the study programme under section 30 of the law No 269/2018 Coll: does not apply.

1. Study programme basic data

a) *Title of the study programme and the number according to the register of the study programmes:*

Medical, Clinical and Pharmaceutical Biochemistry

b) *The degree of the university studies a) SCED-F code of the education*

The third grade, ISCED-F code 864

c) *Place/s of realisation of the study programme:*

The Medical Faculty, CU in Bratislava and its parts seat, including clinical workplaces, which are part of university hospitals providing education of students at Faculty of Medicine, CU in Bratislava, with the university has concluded "Contracts on practical training" 9University Hospital Bratislava, National Institute for Children's Diseases, Merciful Brothers University Hospital., Saint Elizabeth Cancer Institute, National Oncological Institute, National Institute of Cardiovascular Diseases]

d) *Title and number of the study programme, after completion of which the university education or the combination of two study programmes after completion of which the university education is achieved, SCED-F codes of the branch/ branches: of the study:*

45 General Medicine, ISCED-F code of the branch of the study 0912 Medicine

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

Academically oriented, preparation for the performance of the regulated profession

f) *Awarded academic degree*

doctor ("Philosophiae Doctor", in short, "PhD. ")

g) *Form of study:*

full-time (internal)

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

A study programme is not a joint study programme

i) *The language in which the programme is organised*

Slovak, English

j) *The standard length of study in academic years*

four years

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

A new study programme – planned number of admitted students to the 1st year is 5

2. Graduate profile and learning objectives

a) *The institution defines the study programme's learning objectives, such as students' abilities when completing the programme and the primary learning outcomes.*

b) Graduates from the PhD. study programme Medical, Clinical and Pharmaceutical Biochemistry, the 3rd grade of university study, will master scientific work principles and methodology. They will perform professional and scientific activities in biochemistry, clinical biochemistry, biomedicine, pharmacology, and pharmacological research. The academic knowledge and practical skills they acquired in the study will allow them to work as a scientific worker in related medical and pharmacological branches, such as e.g., molecular biology, clinical biochemistry, toxicology, veterinary medicine, and pharmacology. The graduates can work independently in science and bring their solutions to the stated branches.

The students' abilities after completion of the study will result from frame topics which are: metabolism of saccharides, lipids, amino acids, nucleotides and nucleic acids and other biologically significant substances under normal and pathological conditions. Integration of metabolism, tissue and organ biochemistry Hormonal regulation and cellular signalisation, signal transduction processes. Genomics, proteomics, metabolomics and apoptosis, utilisation of examination of laboratory parameters in diagnostic and disease monitoring. Basic pathobiochemical mechanisms applied at the origination of organ impairment and the development of pathological processes. Specific interactions of medication with the organism, biotransformation systems. Enzymology of biosynthesis of pharmaceutically significant metabolites. Modern experimental methods used in biochemistry, pharmacy, clinical biochemistry and biotechnologies.

During the PhD. study, a student in this study programme acquires knowledge in medical and clinical biochemistry focused on the issues of mechanisms of physiological and pathological processes, which run in the human body. He/she studies the biochemical nature of pathological processes at an organism cellular and subcellular level. In the study, the students learn to form a scientific problem independently, to form a scientific hypothesis, prepare and realise a scientific experiment, use a biological model of organisms and tissue cultures at the research, objectively assess obtained results and their statistical analysis. These activities' main aim will be theoretical and practical mastering methods for processing biological material for particular analyses.

The requirement for completion of the study programme is the knowledge of molecular mechanisms involved in the regulation of essential processes running in the tissue cells as well as their disorders resulting in pathological conditions, theoretical and practical management of methods for processing of biological material for analyses, especially at the level of molecules, cells and tissues, preparation and realisation of a scientific experiment, objective assessment of gained results and their statistical analysis, extension and modernisation of diagnostic procedures in medicine, ability to present own results of the research to professional public at conferences and scientific events and publishing articles in the journals.

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

The third degree focuses on the closer specialisation and deepening of theoretical and scientific knowledge in the professional preparation of an expert in medical, clinical and pharmaceutical biochemistry. Graduates from the study programme find employment at all universities where medical chemistry, biochemistry, clinical biochemistry, and pathobiochemistry are taught, either as university teachers or scientific and research workers. Thanks to familiarising with a large spectrum of knowledge and practical skills, the graduate finds employment at workplaces of healthcare (clinics or departments of clinical biochemistry, workplaces of reproductive medicine, workplaces of experimental pharmacology, endocrinology, oncology and so on.). A graduate might find employment as researchers, developmental, and professional workers in the private sector's pharmaceutical and biochemical industry.

If a graduate of the doctoral studies also has a necessary qualification in the frame of accreditation specialised education (for example, in accredited specialisation branches of specialised education in the healthcare occupation: a doctor – medical biochemistry, a doctor – laboratory medicine, laboratory diagnostician – laboratory and diagnostic methods in clinical biochemistry, laboratory diagnostician – laboratory medicine and so on), might contribute to the education of future specialists and at their preparation for regulated occupation (general medicine, dentistry, healthcare branches, pharmacy).

- d) *Relevant external stakeholders who have provided the statement or a favourable opinion on the acquired qualification's compliance with the profession's sector-specific requirements.*

As general medicine is a study programme whose content definition is related to the preparation of experts for some from regulated occupations with coordination of education in appendix No. 2 MSVVS SR no 16/2016 No 16/2016 Coll. and results from study branches assigned to regulated professions according to the Government Regulation No.296/2010 Coll. on 29 March 2021, we asked the Ministry of Healthcare SR for the positive opinion to the concord of acquired qualification with sectoral specific requirements for the performance of the occupation.

3. 3. Employability

- a) *Evaluation of the study programme graduates employability.*

Graduates from the PhD. studies might find employment in the frame of education as university teachers or scientific research workers at universities focused on medicine, healthcare science, public healthcare and biochemistry. At present, the graduates are required mainly at workplaces in healthcare (clinics or departments of clinical biochemistry and workplaces of reproductive medicine, experimental pharmacology, endocrinology, oncology and so on.).

Graduates from the study programme Medical, Clinical, and Pharmaceutical Biochemistry at the Faculty of Medicine CU in Bratislava will master scientific work principles and methodology. They will perform professional and scientific activities in biochemistry, clinical biochemistry, biomedicine, pharmacology, and pharmacological research. The academic knowledge and practical skills they acquired in the study will allow them to work as a scientific worker in related medical and pharmacological branches as, e.g., molecular biology, clinical biochemistry, toxicology, veterinary medicine, and pharmacology. The graduates will have the ability to work independently in science, bring their solutions, and contribute to developing the scientific knowledge in the stated branches. They are qualified for successful employment as the team leaders in the broader spectrum of scientific and research institutions focused on medical, veterinary or pharmaceutical sciences. They are professionally prepared to work creatively in scientific institutes of the Slovak Academy of Science at various research levels.

Among other occupations that for independent performance require accredited specialisation education in the healthcare occupation, there belongs a doctor – laboratory medicine, a doctor – clinical biochemistry, laboratory diagnostician – laboratory and diagnostic methods in clinical biochemistry and laboratory diagnostician – laboratory medicine.

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

It is a new study programme, until now without graduates.

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

To assess the quality of the submitted study programme, a request was sent to selected employers to express their opinion on the need for a new doctoral study programme focused on medical, clinical, and pharmacological biochemistry. Delivered letters are available at the department of scientific-research activities, doctoral studies and international relationships of the Faculty of Medicine, Comenius University in Bratislava. Relevant external stakeholders who have provided the statement or a favourable opinion on the acquired qualification's compliance with the profession's sector-specific requirements are from:

Biomedical Centre SAS, Medirex, s.r.o., University Hospital Bratislava - the Urological Clinic, 1st and 2nd Neurological clinic, the 1st Clinic of Anaesthesiology and Intensive Medicine, the Clinic of Pulmonology, Phtiseology and Functional Diagnosis, the 2nd Gynaecological and Obstetric Clinic, National Institute of Children Health - the Clinic of Children's Psychiatry and the Children's Clinic.

4. Structure and content of the study programme

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

The study programme considers the mission and aims determined by the Faculty of Medicine Comenius University in Bratislava in the document 'Long-term objectives of the Faculty of Medicine, Comenius University in Bratislava' in research and education. The study programme was created or innovated in terms of trends of development of such created programmes in Europe and worldwide with consideration of attractiveness for graduates in the joint grade of the first and second grade of the study in the programme General

Medicine and also for graduates from the second grade of the study with focusing on biology, biochemistry, pharmacy, veterinary medicine and others. The study programme was created in concord with the needs of the practice. Therefore, one of its main viewpoints at outlining the subjects is the applicability of the actual practice's knowledge and competencies. The study programme and its study plan are designed so that students interested in this study programme might undergo part of the study abroad. The faculty has rich experience and a wide net of partner universities with similar study programmes to the submitted study programme.

In compliance with Dublin descriptors and at the same time in the sense of the national qualification frame, the graduates of the study programme will acquire the 8th level of qualification.

The study programme's profile subjects are compulsory or compulsory elective subjects determined to acquire the knowledge and skills necessary for completing the study programme. Profile subjects present theoretical and methodological base in the given field of education. They are a substantial part of the thematic group of state examinations. Together with other educational activities offered to a student in the form of elective subjects, allow the student to have an approach to knowledge and skills necessary to achieve educational outcomes in the student's profile and his/her personal and professional development.

Reasons for the origination of the new study programme Medical, Clinical and Pharmaceutical Biochemistry.

The study branch Medical, Clinical and Pharmaceutical Biochemistry, the 3rd grade of the university study, is a standard study branch at all more significant universities with medical, pharmaceutical and veterinary faculties, including the universities in the European Union countries. The study of medical, clinical, and pharmaceutical biochemistry at these faculties or universities is one of the tuition's priority subjects, allowing to understand the processes running in the human organism under normal and pathological conditions and interpret the medicament mechanism efficacy at the molecular level.

Medical, Clinical and Pharmaceutical Biochemistry is an essential subject of medical, pharmaceutical and veterinary study. It is a modern and permanently developing interdisciplinary branch, which elucidates the mechanism of biological processes and their regulation at the molecular level and creates possibilities for influencing them, primarily pharmacologically. At present, it creates conditions for monitoring the physiological and pathological condition of the organism. The medical, clinical, and pharmaceutical biochemistry frame's special area is studying interaction medicaments with specific enzymological systems engaged in medicaments' biotransformation at the organism's level, cell and subcellular fractions. Finally, the subject of interest in medical, clinical and pharmaceutical biochemistry is also plant biochemistry with the impact on the study of biogenesis enzymes' secondary metabolites produced by curative herbs. Biogenetic relations of enzyme and molecular-biological studies condition rational interventions into endogenic content of effective therapeutical components. Biochemistry is nowadays the fastest developing part of chemistry, and the future of modern and innovative technologies is generally anticipated in the development of biotechnologies. From this perspective, our economy will absorb many graduates from the study program Medical, Clinical and Pharmaceutical Biochemistry. This study branch integrates graduates' common platform from medical, pharmaceutical, natural science faculties, and technical orientation faculties. The development of the suggested branch is very closely related to the branches, which are in the primary sphere of the interest of scientific-technical development of the modern society as healthcare, pharmaceutical industry, development of new medicaments, nutrition and biotechnology.

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

The study programme recommended study plan and standard length of study are regulated in the Act on Higher Education. In compliance with the faculty's study rules, the study programme follows the European transfer system and collects credits and workload of a student in the academic year. It follows the stated workload expressed in hours of contact tuition and all activities needed to prepare and complete the subject. The numbers of credits for particular subjects were determined to consider the subject's demandingness from the view of a specific field of the curriculum and way of subject completion. The subjects in the recommended study plan's frame allow achieving the determined outcomes of the education. Compulsory and compulsory elective subjects do not exceed 75% of the number of credits stated to complete the study in the study programme related to the 3rd grade of the study.

c) The study programme generally states:

A detailed study plan, also with necessary explanations, is an attachment of the application form.

Outcomes of the education and related criteria and rules of their assessment determined to fulfil all educational aims of the study programme are stated in the subjects' Information Sheets.

For each educational part of the study, plan/subject are determined educational activities (lecture, seminar, exercise, state examination) suitable to achieve education outcomes and are stated in the subjects' information sheets.

Methods by which the educational activity is delivered – in person, distant, combined, curriculum/syllables of a student's subject and workload ('scope' for particular subjects and educational activities separately) following the subjects' Course information sheets.

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 minimum sum of credits for the whole study, which a student must acquire for its successful completion, is 240 credits given by the Act No 131/2002 Coll. on Higher Education and Changes and Supplements to Some Laws, § 54 Postgraduate (PhD.) study programme. The precise allocation of credits is issued in the study plan, which is an attachment to the application form.

State examinations of the doctoral study consist of Dissertation Examination (20 credits), divided into Debate on the written thesis to the dissertation examination and the examination subjects, which do not have assigned separate credits. For submission of the dissertation thesis for the defence is to doctoral students assigned 30 credits. The subjects of the state examinations are part of the study programme. Detailed conditions for regular completion of the study and other conditions which the student must fulfil within the study of the study programme and for its regular completion are in the Study Regulations of the Faculty of Medicine Comenius University in Bratislava (Internal Regulation No. 10/2020), which contains parts:

- Article 27 Individual Study Plan and the Evaluation of the Study Results
- Article 28 Yearly Evaluation of the Doctoral Study
- Article 29 Dissertation Examination
- Article 30 Request for permission to defend the dissertation thesis
- Article 31 Defence of the Dissertation Thesis Requirements:
- Article 32 Preparation of Defence of the Dissertation Thesis
- Article 33 Opponents of the Dissertation Thesis and their Opinions
- Article 33 Defence of the Dissertation Thesis
- Article 35 Discontinuance of the Doctoral Study

Basic requirements of the final thesis, way of its submission, check of originality, archiving, and accessibility is regulated by the Internal Regulation No. 12/2013 Guideline of Rector CU on essential requirements of the final thesis, rigorous thesis and habilitation thesis, control of their originality, archiving and accessibility at CU as amended.

Conditions for regular completion of the doctoral study at the Faculty of Medicine CU in Bratislava

1 The successful completion of all compulsory subjects and the other 2 compulsory elective subjects.

2 Realisation of the examination in the English language

3 Successful completed dissertation examination

4 A doctoral student in the full-time and external form must be an author of a minimum of 3 scientific works 'in extenso'. A minimum of one work must be related to the dissertation work thesis in the indexed journal as the first author. The scientific work in the indexed journal means that it is available in the databases WEB of SCIENCE, PUBMED, SCOPUS or COPERNICUS. The doctoral student must have a minimum of one work in the journal with the impact factor (minimum IF=0,5) as the first author or co-author. In the frame of FMCU, the only credible IF value we consider just the date, which comes from the Journal Citation Reports (JCR), which as the only one the database Web of Science recognises.

5 Just those outcomes are taken into consideration which has been already published. It means not those which were just sent for publishing or accepted for publishing. In moderate cases, it is possible to recognise one missing publication based on the acceptance list. It is also possible to recognise the publication which is already available on PubMed as 'ahead of print.'

6 Acquiring a minimum of 210 credits + 30 credits for acceptance of the dissertation thesis for defence

7 Successful Defence of the Dissertation Thesis

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:*

- the number of credits for compulsory subjects needed for proper completion of the study or the study's part is 40 credits for subjects: New trends in medical microbiology and immunology, Introduction to scientific research 1, Introduction to scientific research 2, Introduction to scientific research 3. The PhD. Student can acquire credits for English language and exam in English Language (10 credits), 20 credits for the dissertation examination and 30 credits for dissertation thesis accepted for defence. The supervisor is responsible for subjects the Dissertation Thesis 1 and 2, and the student might achieve 10 credits for each of these subjects.
- The number of credits for compulsory elective subjects needed for proper completion of the study/completion of a certain part of the study, i.e. A doctoral student will choose according to his/her interest 2 compulsory elective subjects from a broad scale of the list of obligatory elective, subjects, while successful completion of each of these subjects has 5 credits.
- The doctoral student in the full-time study might also gain credits for teaching activity, i.e., the direct tuition or other professional activity related to teaching activity in the daily form in the scope of maximum 4 hours weekly for the academic year in which the tuition runs – 10 credits/academic year
- The doctoral student in the daily acting at clinical workplaces might gain credits for treating and preventive care activity, which they perform – 10 credits/academic year.
- The doctoral students in the frame of the scientific part of the doctoral study get credits for publication activities of scientific articles, writing textbooks, for submitting or gaining the Grant of Comenius University in Bratislava (it is intended just for PhD. Students in the daily form), for participation in the solving the grants, for lectures at congresses or their workplace and so on. The detailed list of credits, which the doctoral students might gain, is a part of the Study plan, which is an attachment of the application form.
- The doctoral student with his/her supervisor each year submit a yearly assessment of the doctoral student, which at the enrolment to the higher year of study a vice-dean of the faculty responsible for the Doctoral Study checks. The doctoral student in the daily form is advised to gain 60 credits, in the external form 48 credits.
- The doctoral student who wants to undergo the dissertation examination must complete the whole study part of the doctoral study (i.e., to pass all compulsory subjects, two compulsory elective subjects of his/her own choice, passed the examination in the English language)

f) *The institution describes the rules for verification of learning outcomes, students' assessment and the possibilities of appealing against the assessment:*

All types of assessment of study results are designed to determine unambiguously required conditions for completing the subject. The student is early enough informed with regular and resit possibilities of continual assessment and regular and resit term examinations. Each student has the right to be informed on all parts of continuous assessment and examination. The student has the right not to accept the exam term's evaluation and take part in the exam's resit term. Suppose the student was at the regular term of the examination evaluated by the mark Fx, or he/she did not register for any of the regular examination terms, in that case, he/she has the right to two resit terms. The student has the right to ask for the last resit examination as a board examination. The Dean, on the suggestion of a person bearing the primary responsibility for performance, development, and provision of the study programme's quality, will assign a minimum three-member examination committee. The chairman of the committee is usually a teacher of the given subject. The board examination form might also be performed without applying a student if a subject teacher applies for it. The Study Regulations of the faculty arrange details.

The student can submit a written application for reviewing the decision on expelling from the study. The Dean might comply with the request. Otherwise, the entire application shall be passed within 15 days from the day of delivery with the attached entire file and written standpoint to the applicant's statements and objection to the Rector. Based on the written student's application, the Dean might grant an exception from the terms of the faculty schedule of the study, control Stages of Study, the maximum length of the study interruption in case the student has not fulfilled conditions of the control Stages of Study or to excuse the missed term. The Study Regulations of the faculty arrange details.

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

The study programmes are designed following ECTS transfers and recognition of credits. The priority is the graduates of the study programmes acquired knowledge and new skills via mobilities at domestic and foreign institutions. Specific requirements for completion of mobilities are adjusted by an individual study plan of a PhD. student. Mobilities are organised in the frame of a broad scope of offered publicly available schemes (Erasmus+, SAIA).

The recognition of the subject's completion is the granting of the subject evaluation and subsequent gaining of the particular number of credit points assigned to the subject, based on the part of the study completed in the past. The student who in the past studied at a

university and his/her study was not regularly completed, the student applying for transfer and the student applying for the change of the study programme in the frame of the study branch might ask for recognition of completed subjects if he/she fulfils the conditions given in the Study Regulations of the FMCU. The student might apply in writing to recognise subject completion before the beginning of the teaching part of the semester of the academic year in which the subject is taught. The Dean decides on recognising the completed subjects after the teachers' opinion of the subjects, recognising which the student requires. The transfer of the credit points is the process of inclusion of credit points gained in the frame of the part of the study at another university in the Slovak Republic or at the university abroad into the number of counted credit points of the student according to Art. 4 Sec. 3 of the Decree on the Credit System of the Study. Academic mobility is formally conditioned with the study's agreement between the student, CU, and the receiving university. The study's agreement contains a suggested study plan of the receiving university and the adequate study at the sending university. The students' subjects should complete at the receiving university based on the study's agreement to become the valid part of the student's study plan. The subjects completed at the receiving university in the frame of academic mobility the faculty recognises based on the record of the study results which the receiving university issues at the end of his/her study. The record of study results becomes part of the student's study documentation kept by the faculty. The details on the recognition of academic mobility subjects are stated in the Study Regulations of FM CU.

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

Final theses are regularly updated and published on the faculty website (www.fmed.uniba.sk) and in the Academic Information System AIS. It is a new study programme. Until now, any concrete theses for the dissertation theses were not announced.

i) *The institution describes or refers to:*

- The rules at entering, elaboration, reviewing, defence and assessment of the final theses in the study programme are stated in the Study Regulations of the Faculty of Medicine, Comenius University in Bratislava (Internal Regulation No. 10/2020) and are freely available on the address: www.fmed.uniba.sk/fileadmin/lf/o_fakulte/dokumenty/SP_1_9_2020.pdf
- Possibilities and procedures of participation in student mobilities are published on the faculty's website seat in part international relationships on the address: www.fmed.uniba.sk/medzinarodne-vztahy/
- Rules of complying with the academic ethic and concluding of consequences are adjusted by the Disciplinary Board of the Faculty of Medicine, Ethical Codex and Ethical Board, while more detailed information is freely available on the websites:

The Disciplinary Board CU (Disciplinary Regulations CU in Bratislava for students, the Internal Regulation No 13/2018)
https://uniba.sk/fileadmin/ruk/legislativa/2018/Vp_2018_13.pdf

The Disciplinary Board CU - Disciplinary Regulations CU in Bratislava for students (the Internal Regulation No 14/2018)
https://uniba.sk/fileadmin/ruk/legislativa/2018/Vp_2018_14.pdf

Faculty of Medicine, CU disciplinary committee for students
www.fmed.uniba.sk/o-fakulte/organy-fakulty/disciplinarna-komisia-pre-studentov/

Ethical Codex of Comenius University in Bratislava (the Internal Regulation No. 23/2016)
https://uniba.sk/fileadmin/ruk/legislativa/2016/Vp_2016_23.pdf

Ethical Board CU
<https://uniba.sk/o-univerzite/organy-uk/eticka-rada-uk/>

The Rules of Procedures of the Ethical Board CU (the Internal Regulation No 24/2016)
https://uniba.sk/fileadmin/ruk/legislativa/2016/Vp_2016_24.pdf

- Procedures applied to students with specific needs:
The Centre for Support for Students with specific Needs acts at Comenius University in Bratislava. The centre provides information, advisory, supportive services and educational activities for applicants and students with specific needs, teachers and the wider public. A coordinator for the support for students with specific needs acts at the faculty level and assesses the possibilities/restrictions/risks of studying a particular study programme for students with specific needs. He/she suggests concrete, adequate adjustments and supportive services determined for a student with specific needs and performs advisory and mediatorial activities. He/she contributes to creating a specific hybrid education system and support for students with specific needs.

Support Centre for Students with Specific Needs
<https://uniba.sk/o-univerzite/rektorat-uk/oddelenie-socialnych-sluzieb-a-poradenstva-oss/centrum-podpory-studentov-so-specifickymi-potrebami-cps/>

The present coordinator for students with specific needs in the frame of the Faculty of Medicine CU in Bratislava is:
prof. MUDr. Ján Pečeňák, CSc., Psychiatric clinic Faculty of medicine CU and University Hospital Bratislava
tel. number: 02/572 90 385
email: Jan.Pecenek@sm.unb.sk

- Procedures of submission of impulses and appeals from the side of students are adjusted in the Study Regulations of the Faculty of Medicine, Comenius University in Bratislava (the Internal regulation No. 10/2020), which is freely available at the address: www.fmed.uniba.sk/fileadmin/lf/o_fakulte/dokumenty/SP_1_9_2020.pdf

5. Course information sheets of the study programme

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

The course information sheets of the study programme subjects are separate from the study programme's description.

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

It is a new study programme, the timetable of which is not available yet. The current schedule of the current academic year is available on the website seat of the faculty:

<https://www.fmed.uniba.sk/studium/doktorandske-studium/>

<https://zona.fmed.uniba.sk/studium/doktorandske-studium/>

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. MUDr. Ladislav Turecký, CSc., a university teacher – professor, in the function of professor. Contact: The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry, the Faculty of Medicine Comenius University in Bratislava, Špitálska 24, 813 72 Bratislava, tel.: +421 2 90 119 416, email: ladislav.turecky@fmed.uniba.sk

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

The teacher of the profile subject/ Contact (workplace, email, telephone number)	Reference to the Register of the University Employees	Title the profile subject
prof. MUDr. Ladislav Turecký, CSc. The Institute of Medical Chemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, ladislav.turecky@fmed.uniba.sk ; 02/90119 416	www.portalvs.sk/regzam/detail/3438	1 New Trends in Medical, Clinical and Pharmaceutical Biochemistry 2 Dissertation thesis I. 3 Dissertation thesis II. 4 Dissertation Examination 5 Defence of the Dissertation Thesis
Doc. RNDr. Jana Muchová, PhD. The Institute of Medical Chemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, jana.muchova@fmed.uniba.sk ; 02/90119 411	www.portalvs.sk/regzam/detail/3309	1 New Trends in Medical, Clinical and Pharmaceutical Biochemistry 2 Dissertation thesis I. 3 Dissertation thesis II. 4 Dissertation Examination 5 Defence of the Dissertation Thesis
Doc. Ing. Ingrid Žitňanová, PhD. The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, ingrid.zitnanova@fmed.uniba.sk ; 02/90119 559	www.portalvs.sk/regzam/detail/3466	1 New Trends in Medical, Clinical and Pharmaceutical Biochemistry 2 Dissertation thesis I. 3 Dissertation thesis II. 4 Dissertation Examination 5 Defence of the Dissertation Thesis
Doc. RNDr. Monika Ďurfinová, PhD. The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, monika.durfinova@fmed.uniba.sk ; 02/90119 575	www.portalvs.sk/regzam/detail/3133	1 New Trends in Medical, Clinical and Pharmaceutical Biochemistry 2 Dissertation thesis I. 3 Dissertation thesis II. 4 Dissertation Examination 5 Defence of the Dissertation Thesis

Note: Three persons are sufficient as the regulated occupation responsible for the performance of the study programme, we confirm that the fourth person providing profile subjects is over 65, we are prepared to show a fluent transition to his successor with the guarantee that his successor is entirely prepared to become a person responsible for delivery, development and securing the quality of the study programme. The long-term sustainability of the programme is therefore secured.

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

The research/art/teacher profiles of persons responsible for the study programme's profile courses are in a separate attachment.

d) *List of teachers in the study programme with the assignment to the subject and provided with a link to the central Register of University staff, with contact details:*

Compulsory subjects:

The teacher of the obligatory subject/ Contact (workplace, email, telephone number)	Reference to the Register of the University Employees	Course ID:
Prof. MUDr. Viera Štvrtinová, CSc. The 1st internal clinic of the Faculty of Medicine CU in Bratislava viera.stvrtinova@uniba.sk ; 02 57 290 329	www.portalvs.sk/regzam/detail/3380	Introduction to scientific research 1.
Doc. MUDr. Jozef Záhumenský, Ph.D. The Second Oncological Clinic of the Faculty of Medicine, Comenius University in Bratislava zahumensky@ru.unb.sk ; 02 57 290 682	www.portalvs.sk/regzam/detail/23975	Introduction to scientific research 1.

Prof. RNDr. Ivan Varga, PhD. et PhD. The Institute of Histology and Embryology of the Faculty of Medicine, Comenius University in Bratislava ivan.varga@fmed.uniba.sk ; 02 90,119,547	www.portalvs.sk/regzam/detail/3448	Introduction to scientific research 1.
Prof. MUDr. Ján Pečeňák, CSc. The Psychiatric Clinic of the Faculty of Medicine, Comenius University in Bratislava jan.pecenak@sm.unb.sk ; 02 57290 385	www.portalvs.sk/regzam/detail/3337	Introduction to scientific research 2.
Prof. MUDr. Daniela Ostatníková, PhD. The Institute of Physiology of the Faculty of Medicine, Comenius University in Bratislava daniela.ostatnikova@fmed.uniba.sk ; 0290119525	www.portalvs.sk/regzam/detail/3323	Introduction to scientific research 2.
Doc. MUDr. Alexandra Bražinová, PhD., MPH ass. prof. The Institute of Epidemiology of the Faculty of Medicine, Comenius University in Bratislava alexandra.brazinova@fmed.uniba.sk ; 02 90119 487	www.portalvs.sk/regzam/detail/8790	Introduction to scientific research 2.
Prof. MUDr. Michal Mego, PhD., DrSc. The Second Oncological Clinic of the Faculty of Medicine, Comenius University in Bratislava michal.mego@nou.sk	www.portalvs.sk/regzam/detail/3289	Introduction to scientific research 3.
Prof. MUDr. Boris Mravec, PhD. The Institute of Physiology of the Faculty of Medicine, Comenius University in Bratislava boris.mravec@fmed.uniba.sk ; 02 90119 527	www.portalvs.sk/regzam/detail/3305	Introduction to scientific research 3.
Prof. MUDr. Fedor Šimko, CSc. The Institute of Pathological Physiology of the Faculty of Medicine, Comenius University in Bratislava fedor.simko@fmed.uniba.sk ; 02 90119 288	www.portalvs.sk/regzam/detail/3366	Introduction to scientific research 3.
PhDr. Tomáš Hamar, PhD. The Institute of Foreign Languages of the Faculty of Medicine, Comenius University in Bratislava tomas.hamar@fmed.uniba.sk ; 02 90119 320	www.portalvs.sk/regzam/detail/5222	English language and Exam in the English Language
Ing. J. Babelová, PhD. The Institute of Foreign Languages of the Faculty of Medicine, Comenius University in Bratislava janka.babelova@fmed.uniba.sk ; 02 90119 418	www.portalvs.sk/regzam/detail/3075	English language and Exam in the English Language
Mgr. Katarína Hromadová, PhD. The Institute of Foreign Languages of the Faculty of Medicine, Comenius University in Bratislava katarina.hromadova@fmed.uniba.sk ; 02 90119 504	www.portalvs.sk/regzam/detail/5021	English language and Exam in the English Language

Compulsory elective subjects:

The teacher of compulsory elective subject/ Contact (workplace, email, telephone number)	Reference to the Register of the University Employees	Course ID:
prof. PhDr. MUDr. Alena Furdová, PhD., MPH, MSc., FEBO , the Clinic of Ophthalmology of the Faculty of Medicine Comenius University in Bratislava, alika.furdova@gmail.com ; 02 48234 607	www.portalvs.sk/regzam/detail/3147	The register of diseases, national healthcare registers, follow-up
Doc. MUDr. Jozef Záhumenský, Ph.D. The Second Oncological Clinic of the Faculty of Medicine, Comenius University in Bratislava zahumensky@ru.unb.sk ; 02 48234 682	www.portalvs.sk/regzam/detail/23975	Functional Anatomy of human reproduction and clinical embryology
Prof. RNDr. Ivan Varga, PhD. et PhD. The Institute of Histology and Embryology of the Faculty of Medicine, Comenius University in Bratislava ivan.varga@fmed.uniba.sk ; 02 90,119,547	www.portalvs.sk/regzam/detail/3448	Functional Anatomy of human reproduction and clinical embryology
Prof. MUDr. Ján Pečeňák, CSc. The Psychiatric Clinic of the Faculty of Medicine, Comenius University in Bratislava jan.pecenak@sm.unb.sk ; 02 57290 385	www.portalvs.sk/regzam/detail/3337	Neuroscience – New Trends
Prof. MUDr. Daniela Ostatníková, PhD. The Institute of Physiology of the Faculty of Medicine, Comenius University in Bratislava daniela.ostatnikova@fmed.uniba.sk ; 0290119525	www.portalvs.sk/regzam/detail/3323	Neuroscience – New Trends
Prof. MUDr. Boris Mravec, PhD. The Institute of Physiology of the Faculty of Medicine, Comenius University in Bratislava boris.mravec@fmed.uniba.sk ; 02 90119 527	www.portalvs.sk/regzam/detail/3305	Neuroscience – New Trends

Prof. MUDr. Beata Mladosičová, CSc. The Institute of Pathological Physiology of the Faculty of Medicine, Comenius University in Bratislava beata.mladosičova@fmed.uniba.sk ; 02 90119 604	www.portalvs.sk/regzam/detail/3298	Pathological Physiology and Pathology – new trends
Prof. MUDr. Martin Wawruch, PhD. The Pharmacology and Clinical Pharmacology of the Faculty of Medicine, Comenius University in Bratislava martin.wawruch@fmed.uniba.sk ; 02 90119 229	www.portalvs.sk/regzam/detail/3464	New medicaments and strategies in pharmacotherapy
Doc. MUDr. Mária Bucová, CSc., adj. prof. Immunological Institute of the Faculty of Medicine CU in Bratislava, maria.bucova@fmed.uniba.sk ; 02 90119 351	www.portalvs.sk/regzam/detail/3101	New trends in medical microbiology and immunology
Doc. et Doc. MUDr. Adriana Liptáková, PhD., MPH Immunological Institute of the Faculty of Medicine CU in Bratislava adriana.liptakova@fmed.uniba.sk ; 02 9011 9206	www.portalvs.sk/regzam/detail/8382	New trends in medical microbiology and immunology
Doc. RNDr. Vladimíra Ďurmanová, PhD. Immunological Institute of the Faculty of Medicine CU in Bratislava vladimira.durmanova@fmed.uniba.sk ; 02 9011 9887	www.portalvs.sk/regzam/detail/5446	New trends in medical microbiology and immunology
Doc. Mgr. Ivana Shawkatová, PhD. Immunological Institute of the Faculty of Medicine CU in Bratislava ivana.shawkatova@fmed.uniba.sk ; 02 9011 9886	www.portalvs.sk/regzam/detail/3394	New trends in medical microbiology and immunology
Prof. RNDr. Vanda Repiská, PhD. The Institute of Biology, Genetics and Clinical Genetics of the Faculty of Medicine Comenius University in Bratislava, vanda.repiska@fmed.uniba.sk ; 02 90119 500	www.portalvs.sk/regzam/detail/3360	New Trends in Medical Biology and Clinical Genetics
Doc. MUDr. Daniel Böhmer, PhD. The Institute of Biology, Genetics and Clinical Genetics of the Faculty of Medicine Comenius University in Bratislava, daniel.bohmer@fmed.uniba.sk ; 02 90119 203	www.portalvs.sk/regzam/detail/3094	New Trends in Medical Biology and Clinical Genetics
Doc. RNDr. Ľuboš Danišovič, PhD. The Institute of Biology, Genetics and Clinical Genetics of the Faculty of Medicine Comenius University in Bratislava, lubos.danisovic@fmed.uniba.sk ; 02 90119 215	www.portalvs.sk/regzam/detail/3122	New Trends in Medical Biology and Clinical Genetics
Doc. Ing. Helena Gbelcová, Ph.D. The Institute of Biology, Genetics and Clinical Genetics of the Faculty of Medicine Comenius University in Bratislava, helena.gbelcova@fmed.uniba.sk ; 02 90119 502	www.portalvs.sk/regzam/detail/5829	New Trends in Medical Biology and Clinical Genetics

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

It is a new study programme; until now, any concrete theses for the dissertation theses were not announced. We state the orientation of the research of the final thesis supervisors.

The supervisor of final theses/ Contact (workplace, email, telephone number)	Reference to the Register of the University Employees	Orientation of the dissertation theses
Prof. MUDr. Ladislav Turecký, CSc. The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, ladislav.turecky@fmed.uniba.sk ; 02/90119 416	www.portalvs.sk/regzam/detail/3438	Experimental hepatology, biotransformation system of the liver. Evaluation of the liver function and fibre markers Proteinuria and enzymuria in diagnosis. Non-alcoholic fatty liver diseases.
Doc. RNDr. Jana Muchová, PhD. The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, jana.muchova@fmed.uniba.sk ; 02/90119 411	www.portalvs.sk/regzam/detail/3309	Cognitive fragility, sarcopenia, oxidation stress, antioxidants, markers of oxidative stress, inflammation and cardiovascular diseases (subfractions of lipoproteins)
Doc. Ing. Ingrid Žitňanová, PhD. The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry of the Faculty of Medicine Comenius University in Bratislava, ingrid.zitnanova@fmed.uniba.sk ; 02/90119 559	www.portalvs.sk/regzam/detail/3466	Senescence, antioxidants, oxidative stress, nanoparticles, lipoproteins
Doc. RNDr. Monika Ďurfinová, PhD. The Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry of the	www.portalvs.sk/regzam/detail/3133	CNS, pulmonary fibrosis, sclerosis multiplex, sepsis

Faculty of Medicine Comenius University in Bratislava, monika.durfinova@fmed.uniba.sk ; 02/90119 575		
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- f) *Reference to scientific/artistic-pedagogical characteristics of the supervisor of final theses:*
Scientific-pedagogical characteristic of supervisors are available on the faculty.
- g) *Students' representatives who represent the interests of students of the study programme (name and contact):*
Students' chamber of the Academic Senate of the Faculty of Medicine, Comenius University in Bratislava (www.fmed.uniba.sk/scas/). The chairman is the student Ivan Fuljer, MPH (fuljer1@uniba.sk), the vice-chairman is Ján Chvála (chvala2@uniba.sk).
- h) *Study advisor of the study programme (indicating contact details and information on the access to counselling and consultations schedule).*
Doc. RNDr. Jana Muchová, PhD. (jana.muchova@fmed.uniba.sk; personal contact after agreement via email)
- i) *Other supporting staff of the study programme – assigned study officer, career counsellor, administration, accommodation department, etc. (with contact details).*

The Department of Scientific-Research Activity and Foreign Relations acts as part of the Dean's Office of the Faculty of Medicine, Comenius University in Bratislava, responsible for students' complex care in the doctoral study programmes. The department is adequately personally, professionally and financially funded. The supportive professional staff at this department provides a tutorial, advisory, administrative and other supportive services and related activities for students in the doctoral study programmes. It also provides administrative support for international mobilities of doctoral students. The contact of the employees of the department are on the websites: www.fmed.uniba.sk/pracoviska/dekanat/ and on <https://zona.fmed.uniba.sk/studium/doktorandske-studium/>

Since the year 2017, the **Project Centre** is an integral part of the Faculty of Medicine CU in Bratislava. It provides active cooperation for students in the third grade of the education as well as to their supervisors at:

- Searching and observing present appeals for the support of education, research and development in the frame of the SR, international institutions and EU institutions,
- Provision of information to workplaces and employees of FM CU on present appeals for submitting of projects,
- Provision of training activities and seminars for particular faculty workplaces on specifics of particular appeals for submitting projects,
- Consultancy activities at the processing of projects for particular faculty workplaces,
- Organising internal faculty presentations of project objectives and organising independent external examination of the prepared project proposal,
- Management of administrative part of the preparation and realisation of projects from the professional faculty workplaces,
- Provision of basic administrative service at the processing of projects to present appeals,
- Preparation and realisation of own projects to widen activities of the project centre,
- Systematic building of contacts and cooperation on the national and international level in education, research, and application of its results in practice.

The Project Centre of the Faculty of Medicine CU in Bratislava contact is on the website: www.fmed.uniba.sk/opp/

At Comenius University in Bratislava, the doctoral students in the full-time form can apply each year for **Grants of Comenius University** CU grants to support doctoral students' scientific and pedagogical projects in the full-time for at the faculties of CU. Details are on the website: <https://uniba.sk/veda/vedecke-projekty-a-granty/granty-uk/>

For the activities in the programme **Erasmus+**, there is the department for European programmes an Erasmus+ at the Rector's Office of the Comenius University in Bratislava, which manages all activities of the programme at Comenius University and is the scope of the vice-rector CU for International relations (contacts on <https://uniba.sk/o-univerzite/rektorat-uk/oddelenie-pre-europske-projekty-a-erasmus-oep/>). The students in the full-time doctoral study programmes utilise the **accommodation facilities of the Comenius University in Bratislava** with the supportive administrative and technical personnel (<https://uniba.sk/studujnauk/byvajnauk/>).

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 faculty equipment is sufficient for the quality tuition of the subject in the study programme. Regarding the present number of students, the faculty has a sufficient number of reconstructed classrooms with quality technical infrastructure, including classrooms for interactive teaching. The study programme Medical Microbiology and Immunology will be realised mainly at the Faculty of Medicine CU's theoretical institutes in Bratislava. The place of tuition will depend on the dissertation thesis's thesis, the PhD study year. Student is.

The teaching bases for theoretical tuition presents 18 theoretical institutes and 4 purpose-built facilities, which are on the premises of FM CU in the buildings of 'Old theoretical institutes' in Sasinkova street 2 and 'New theoretical Institutes' in Sasinkova street 4 and the building in Moskovska street 2, Bratislava. Theoretical institutes are equipped with specialised classrooms, seminar rooms, computer rooms and dissection rooms with necessary audio-visual techniques and instrumental equipment for students, libraries with particular librarian funds for employees and students' needs, laboratories with technical equipment for needs of tuition and reteam activities besides libraries and seminar rooms of particular institutes, meeting room of the Scientific Board of FM CU, PhD. Students can also utilise common study space and auditories. The large auditory with the capacity of more than 300 students with the area of 276,0 m² with semi-circular stepped sitting. Small Auditory with the capacity of 144 students with the area of 108,0 m² with direct stepped sitting. Ladziansky Auditory with the capacity of 200 students with the area of 184,0 m² with direct stepped sitting. 54 clinics present the teaching base for practical tuition – specialised teaching workplaces which are on the 6 Bratislava healthcare workplaces (University Hospital Bratislava, National Institute for children's Diseases, University Hospital of Merciful Brothers, St. Elizabeth Cancer Institute,

National Oncological Institute, National Institute of Cardiovascular Diseases), with which the faculty concluded 'Contracts about practical tuition'. The use of computer simulators and interactive models is in the medical tuition, including the third grade, i.e., PhD. study, a worldwide trend. The interactive procedure contains the assessment, formulation of decisions and correction of errors which has compared to the work with patients advantage that the tuition is more effective.

The scientific part of the doctoral work in the study programme Medical, Clinical and Pharmaceutical Biochemistry will be provided mainly on the Institute of Medical Chemistry, Biochemistry and Clinical Biochemistry FM CU. In interdisciplinary research, the Institute of Biology, Genetics and Clinical Genetics FM CU, Institute of Pathological Anatomy, FM CU and in the Pharmacobiochemical laboratory of the 3rd Internal Clinic FM CU. The scientific part of tuition of PhD. students depend on the theme of the dissertation thesis. The workplace's existing infrastructure corresponds with the requirements for well-functioning biochemical workplace and scientific projects. Technical conditions also correspond with the methodological procedure allowing for the realisation of the PhD's scientific part of the study programme.

The workplace has essential equipment technique as analytical scales - AL 54/01 (Metler Toledo), pH-meters - HI 9219 (HANNA), PH 211 (HANNA), water baths - a water bath shaker 357, Thermomixer Eppendorf, block heater (Stuart Scientific), thermostat Lange, centrifuges - cooled centrifuge K 24d (Janetzki), microcentrifuges - Force (DenverInstr.), ALC 4214 (Jouan), centrifuge Hettich 32 a 32 R, equipment for preparation of ultra-clean water (Millipore, Corporation). At the workplace, there are three deep-freezing boxes (VXE 380 (Jouan)) for storage of biological material at -80°C, several refrigerators and freezers for storage of material at -20°C, and also cooled box with two rooms allowing for storage and laboratory work in the environment at +4 °C. The laboratory for tissue cultures is equipped with a sterile laminar box Biohazard and thermodesinfector 7783 (Miele).

The workplace is equipped with the instrumental technique for photometric technique and spectrofluorometric examinations (spectrophotometers UV-VIS PM 2DL (Zeiss, OPTON), SPEKOL 21 (Zeiss, Jena), SPEKOL 220 (Zeiss, Jena), Novaspec II (Pharmacia), 4060 (Pharmacia, Biotech.), UV-VIS 1700 (Shimadzu), Kontron, Spectrofluorometer Perkin Elmer LS-45, fluorescent spectrometer (Luminometer Glomax 96 microplate Luminometer Promega). The workplace owns an ultracentrifuge allowing for subcellular fractionation of biological material. It has instrumental equipment for separation of proteins, nucleic acids, amino acids or higher carboxylic acids (electrophoretic appliances Lipoprint LDL and HDL system (Quantimetrix Corp., CA, USA), Western blots and detection system for assessment of jellies and Western blots (BioRad ChemiDoc™ MP Imaging System), highly effective liquid chromatography (HPLC (Watrex) with UV, fluorescent and coulochemical detector, HPLC (Merck)), gas chromatography - gas chromatograph Master GC (Chromservis)). It has instrumental equipment for immunochemical examination as, e.g., immunoassay, quantification of specific proteins with the help of monospecific antibodies – cooled electrophoretic tank with the cooling unit (MS Major Science), ELISA humareader (Human), ELISA Reader EL808 (BioTek).

The workplace also has qPCR (RT-PCR, BioRad) for precise determination of the amount of DNA or RNA, with fluorescent microscope Olympus Bx41 to detect oxidatively impaired DNA lyophilisator LYOVAC GT2 (Leybold LH).

There are five student laboratories for the tuition of medical chemistry and biochemistry and small auditorium (cca for 60 students), laboratory of liquid chromatography, laboratory of gas chromatography, laboratory for work with cellular cultures, other 6 scientific laboratories and two rooms for devices.

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.).*

Library services are provided by the **Academic Library of the Faculty of Medicine, Comenius University in Bratislava** (further just AL FM CU), which is an educational and information workplace and at the same time part of the scientific and research base of the faculty. Main activities of AL FM CU are predominantly oriented to activities, the prevailing part of which, has a long-term or permanent character:

- Supplementing of library fund focused on the coverage of obligatory and obligatory elective subjects – purchase, exchange with domestic and international partners, with a donation,
- Name and factual processing of all types of documents in the system VTLS/Virtua,
- Revision of the librarian fund, elimination of outdated, worn off and multiplicity literature, physical protection of the librarian fund,
- In-person and absent borrowing of the literature,
- Exchange of the journal Bratislava Medical Journal with domestic and international exchange partners
- Inter librarian and international borrowing service
- Borrowing of literature from other libraries users, arrangement of request for borrowing from other libraries, acquiring of article copies from scientific journals,
- Consultation activity – professional help of users at searching for information,
- Provision of study rooms,
- Creation of specialised databases,
- Registration of public activities and citations of the FM CU employees,
- Research service – overview of the literature on required themes (selective until the level of full texts), overviews of publication activities, citation research,
- Online access to electronic information sources – bibliographic, citation and full-text databases, e-print of journals,
- Information preparation of users – lectures and courses for the student focused on searching for information,
- Solving of own projects oriented to grant schemes especially of the Ministry of Education, Science and Research of the SR or the Ministry of Culture of the SR,

Statistical indicators of the Academic Library of the Faculty of Medicine, Comenius University in Bratislava

The status of the librarian fund – 136 109 library units.

The number of registered users – 2 889, out of it 2 383 students.

Approximated number of borrowings realised in one year before the pandemic COVID-19 – 42 374.

The database contains complete bibliographic information on publications of pedagogical and scientific-research employees and PhD. students in the full-time form at FM CU. The information value of the databases also increases the record-keeping of responses to the publications. The database's data are exported to the Central register of publication activities (further just CREPČ) (<http://www.crepck.sk/>). They are one of the bases for the allocation of the state budget grants to public universities.

Availability of electronic information sources of the Academic Library of the Faculty of Medicine, Comenius University in Bratislava
AL FM CU in the frame of NIZPEZ projects (National Information System for Support of Science and Development – access to electronic information sources: EBSCOhost, Knovel Library, ProQuest Central, Science Direct, SCOPUS, SpringerLink, Wiley Online Library, Web of Science (Web of Science Core Collection, Current Contents Connect, Essential Science Indicators, Journal Citation Reports, MEDLINE). Based on the subscription for FM CU, access is provided to the collection of e-books of the printing house EBSCO and WILEY and to the Portal 5 Minute Consult,

WWW website and propagation of the Academic Library

The library website (www.fmed.uniba.sk/pracoviska/kniznica) is available in Slovak, and the English language. It is regularly updated and allows for optimal services via the internet.

The Faculty of Medicine CU's information systems are an inseparable part of CU's information systems in Bratislava. They aim to collect data, process, assess, store, and publish relevant information for the PhD. study programmes' needs. The unified authentication system has a unique role in the information systems of the faculty and university, which provides and significantly facilitates the access to critical information sources of the faculty and university from the academic environment, but also from the domestic environment or from abroad in case of participation at international conferences or study stays. The AIS is another essential information system, which is the central university system for the complete administration of the study agenda.

The hardware equipment of Medicine, Comenius University in Bratislava and connection to the internet

Each teacher of the faculty has at disposal his/her personal computer with unlimited access to the internet sources of information, which is at disposal also for students. The domain environment of the faculty allows for each PhD. Student to use any computer at the institutes of the faculty. Access is possible after the authentication with the unique domain login. This feature of the IT environment of the faculty offers to teachers and PhD. students the possibility of constant availability of a functional computer also during a possible malfunction of the own computer.

The faculty has more than 1600 computers, notebooks, and tablets connected to its pedagogical and scientific and research processes. They are placed in the theoretical institutes and clinics of the FM. Out of the number of computers, 70 computers are available directly for students and PhD. Students in the computer rooms and study rooms of the faculty academic library. All desktop computers and mobile equipment can provide unlimited connection to the internet with structured cabling on the LAN net or wifi net of the faculty. The skeleton of the net is realised on an optical basis, allowing for the fitting of new technologies acquiring high-speed connection into the internet.

The high-speed internet provided by the academic net SANET provides teachers and students with the possibility of access to various online information sources. The faculty's premises are covered with WIFI signal of the international net EDUROAM (EDUcation ROaming), which the university maintains. The net EDUROAM is supported by many other significant European and world universities and provides a possibility of trouble-free and instant connection to the internet at the visit of such a university.

WiFi covers faculty premises and provides for students and PhD. students free connection to the internet and access to the internet's information sources via their own IT equipment such as notebooks, tablets, and smartphones. At present, the faculty's WiFi covering provides 27 connection points placed in auditories, study rooms, and libraries of the theoretical institutes and free premises of the FM with students' high movement.

The faculty equipped three computer rooms. There are 25 computers of the type 'All in One' and a video projector in the main computer room. All PCs are equipped with the operating system Windows 7 in the Slovak Language to switch into the English language. As an office package, there is used MS OFFICE 2016. A newly built smaller computer room in Moskovska street 2, Bratislava, is equipped with 13 pieces of AIO PC with the operation system Win 10 and office package MS Office 2016. Both computer rooms are under the Computer Centre FM CU administration and are fully available for each institute and clinic at request.

Besides stated, the faculty has at disposal four large auditories, fully equipped with the audio-visual technique consisting of a notebook, video projector, projection screen and PA equipment system. This equipment allows for presenting the materials containing the elements of the multimedia character.

Besides the computer rooms and auditories, the tuition also runs at computers in libraries and practical rooms of particular institutes and FM clinics. The presentation technique is fixed in the majority and consists of a computer or a notebook, a video projector, and the presentation screen. In auditories of the clinics that do not have a fixed installed presentation technique, there is the possibility to use a mobile presentation technique at disposal in three sets at request.

Part of the computer equipment is connected to various special diagnostic and assessment equipment, microscope, simulation manikins and simulators. There is installed control software delivered with the device.

The faculty also has 6 pieces of teleconference equipment (Cisco and Huawei) placed at the selected clinics and institutes of FM CU. They serve for immediate connection between clinics to share the interactive educational content (operations, consultations, MRI and X-ray scans, and so on) and for treating purposes, in case of immediate need of consultation with an expert from another clinic or faculty hospital. Teleconference equipment allows for live transmission directly from the dissection room

Possibilities of the hardware and software equipment of the faculty and its utilisation in the tuition of the subjects of the study programme:

- the faculty operates the website as part of the university website, which allows publishing relevant information concerning the study programmes on the address www.fmed.uniba.sk in the Slovak and English mutation.
- The faculty provides a space for storing educational and other helpful information materials on the address <http://portal.fmed.uniba.sk/>. The teaching portal is part of the project Mefanet, in which all medical faculties are involved from the Czech and Slovak Republic.
- Possibility to use the university Moodle environment (moodle.uniba.sk) for E-learning education. E-learning is an innovative form of education and offers possibilities for utilising multimedia educational elements, and new information-communication means to upgrade and better the educational process's attractiveness.
- Computers and notebooks of the faculty are equipped with MS Win 7 and 10, version Professional.
- Possibility to use the programmes of the package MS Office 2016 Professional (Word, Excel, PowerPoint, Outlook, Publisher, Access, InfoPath) according to requirements – for preparation of educational materials and in the process of tuition, for the administration of the study and study results.
- Possibility to utilise the licensed software.
- Possibility to utilise freely available software.

The faculty's whole computer net under the Computer Centre FM CU management, which administers the faculty's server equipment, provides the computer network's basic working and other network services. The essential services provided for the user are timely unlimited connectivity into the internet provided with the firewall's administration, email service with the address @fmed.uniba.sk, presentation of the faculty in the form of the website and provided data warehouse with guaranteed renewability in case of breakdowns. Teachers and PhD. students can utilise free access to external paid online information sources, paid full-text journals and other library databases run by the Academic Library of CU from the faculty's environment. The teachers and PhD. students have this service also available from the home environments via remote access. But the inevitable condition is the affiliation to the academia of CU. This service is part of the information system the university provides centrally and maintains for all its employees and students

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

Distant education is provided with the help of the platform MS Teams, to which all students and employees of Comenius University in Bratislava have free access. With the help of MS Teams lectures, seminars, and selected exercises might run. All study materials are available for students also in electronic form. MS Forms is used for testing. Alternatively, Moodle is used for distant teaching.

Thanks to the package MS Office 365, which uses the whole university, sharing the large files is allowed, online teaching and testing in a very reliable regimen with the fluent transfer of significant data volumes simultaneously. Part of this package is also modules as, e.g., MS Teams and Forms, which can also be used in online teaching and online testing. In case of transition of the whole faculty from in-person study to distant education, the Dean's board of the Faculty of Medicine in Bratislava informs the students via electronic post. At short-time transition in the frame of a particular subject, the teacher responsible for the subject informs the students in advance.

The standard part of the educational process is the provision of study materials to students. Several approaches are used for this purpose. The basic information on the subject's content published in the subject information sheet is also the description of the relevant literature sources inevitable for the acquiring of knowledge determined by the subject's content. The faculty tries to provide the needed study literature via its Academic Library. Another way is to publish the presentations and other study materials on the faculty's website on relevant subjects in particular institutes and clinics following the author law. The newest, more sophisticated approach is the publishing of the study materials via the system Moodle and other means of e-learning, which allows the students based on the university personal access to use the study material like presentations, videos, tests and provide direct communication with the teacher with lectures, seminars, exercises and consultations on the subject.

The realisation of the scientific/practical part of the study programme Medical, clinical and Pharmacological Biochemistry in the third grade of education exclusively via the distant method would be likely an exception. In practice, the most used method is the combined method, where part of in-person theoretical education is replaced with the distant method with electronic support.

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

The Faculty of medicine CU in Bratislava, based on the concluded contracts on practical teaching, cooperates with six hospital facilities, i.e., University Hospital Bratislava, the National Institute of the Children's Diseases, the University Hospital of Merciful Brothers, St. Elizabeth Cancer Institute, National Oncological Institute, National Institute of Cardiovascular Diseases.

In the education in the third grade of the study at the Faculty of Medicine CU in Bratislava, the faculty also cooperates with some workplaces of other faculties Comenius University –the Faculty of Natural Sciences, Faculty of Mathematics, Physics and Informatics, Faculty of Pharmacology and the Faculty of Physical Education and Sports and partner institutions of the Centre for Experimental Medicine SAS. The Institute of Experimental Pharmacology and Toxicology (Dr. Bauerová); the Institute of Experimental Endocrinology (prof. Ježová), the Institute of Normal and Pathological Physiology (doc. Pecháňová, Dr. Bernátová). It is a custom that some scientific workers of the Slovak Academy of Sciences workplaces train students of the third grade. The students have access to relevant institutes, and financial sources' scientific infrastructure via the project schemes (research and travel allowance) of the Slovak Academy of Sciences determined for PhD. students.

The Faculty of Medicine, Comenius University in Bratislava, cooperates with many international universities and scientific-research institutions where our student can acquire knowledge and perform part of their research in specialised laboratories of complementary modern equipment. At the realisation of the study in the third grade in the study programme Medical, Clinical and Pharmacological Biochemistry, there is a plan to cooperate with the following international workplaces: Department of Nutritional Sciences, Faculty of Life Sciences, University of Vienna, Austria (prof. K. H. Wagner); Department of Nutrition, University of Oslo, Oslo, Norway (prof. A. Collins); Cardiff School of Biosciences, Cardiff University, Great Britain (Dr. D. Ramji); Department of Haemostasis and Haemostatic disorders Medical University, Lodz, Poland (Prof. Watala); Cultech Ltd, Christchurch Rd, Port Talbot, UK (Dr. I. Garaiova); Horphag Research Ltd, Geneve, Switzerland (Dr. C. Burki and prof. P. Hoegger).

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

The Faculty of Medicine premises, Comenius University in Bratislava (buildings in Sasinkova and Moskovska street), provide equipment for the work. They relax in the corridors, buffet, where the students in their free time meet, discuss or possible study. The faculty provides a connection to the internet for every student/ employee after entering the identification data. In Sasinkova street's outer premises, there is a newly created park with banks, where the students might relax. On the faculty's premises on Sasinkova street, there is a tennis court, fitness centre and sauna, which the students might utilise. Further, they have the Botanic garden of the Faculty of Medicine at their disposal. Especially in the summer months, they can prepare for the examinations or attend the events organised there.

The Institute of Physical Education and Sports workplace is also part of the Faculty of Medicine Cu in Bratislava. The Institute of Physical Education and sports' primary mission is to provide the obligatory teaching of physical education for the Faculty of Medicine students. Further, the institute organises the optional physical education, sports, and activities of the faculty's students and employees pedagogically. Annually, a non-compulsory winter and summer sports training camp is organised. It runs the gymnasium in Mlynska dolina, dock in Karlova Ves and sports area in the FM CU court, which provides other possibilities for physical activities. The Institute of Physical Education and Sports provides the following sports activities for students of the second and third grade of the study, as well for its employees: tourism, ski trips, rafting on the Danube and recreational football in the frame of the Football club of FM CU. At the institute, there also acts the Sports organisation TJ Slavia Medik, in the frame of which under the supervision of the teachers of the Institute of Physical Education and Sports FM CU created sports teams: basketball – female and male, volleyball – female and male, swimming, football, tennis, touristic – water and hiking, floorball team and football team of the employees of FM CU. The activity of the clubs is focused mainly on sports for everybody or recreational sports.

In the frame of the university, there is a concert ensemble and choir. The university and the faculty provide for workers and PhD students possibility to buy a reduced price ticket for various cultural events.

University Pastoral centre of Jozef Freinademetz of Comenius University (www.upc.uniba.sk/) provides possibilities for spiritual activities during the study. Also, directly in the building of the Dean's Office of the Faculty of Medicine Comenius University, a chapel in which the church service is occasionally organised.

f) *Possibilities and conditions for the study programme students' participation in mobilities and internships (indicating contact details), application instructions, and rules to recognise this education.*

The students can participate in the international **mobility programmes of the European Union** as CEEPUS and ERASMUS+, where the application and rules of this education follow the rules of relevant study programmes. The list of participating institutions is regularly updated. The instructions are published on the website of the Faculty of Medicine and university. In scientific work on their projects, possible on the supervisor's projects, they are sent to partner universities and research institutions in Europe and worldwide. They can also use bilateral international mobility projects, e.g., via the Slovak Academic Information Agency and the National Grant Fund.

The binding contractual partnerships allow the participation of interested parties and their representatives at the proposal, approval, performance and assessment of the study programme. The agreements with partners to specify the conditions of the partner's employees' participation in the provision of the study programme and conditions for the provision of space, material and information sources and provision of the study's quality realised in a partner's premises, including the final thesis.

Comenius University can send students abroad to study or internship in its partners' frame (Utrecht Network, SYLFF, some bilateral agreements) **to 63 international universities in more than 30 countries** in Europe and outside of it. Even broader possibilities covering practically the whole world exist in other schemes, especially in the programme Erasmus+ and MSVVS SR activities, realised via SAIA. They are mainly: The Central Europe exchange programme of university studies (CEEPUS), The National Grant Programme (NGP), Austria-Slovakia Vysegradsky fund and others. New possibilities of mobilities in the broader frame of the programme Erasmus+ the university alliance ENLIGHT, in the frame of which Comenius University in Bratislava established cooperation in the year 2020 in the field of education with eight European Universities: University in Bordeaux, University in Groningene, University in Göttingen, University in Uppsala, University in Tart, the Irish National University in Galway and Basque University. The universities undertook to offer their students various educational formats from short-time physical and virtual mobilities in the form of summer schools or so-called live laboratories up to common study programmes, following the accredited SP in the particular countries and to recognise mutually completed subjects.

However, during the present pandemic COVID-19, it plans and realises international mobility to be careful, especially considering the benefits versus risks, especially regarding the receiving country's epidemiological situation.

The coordinators of Erasmus+ acting at the faculty help to comply with the applicant's precise study plan at the international university, which creates a precondition for recognition of the study completed abroad at CU. Detailed information on students' participation in the international mobilities for particular academic years provides the faculty's annual reports. Thanks to the department's activity **for scientific work and foreign relations CU in Bratislava**, each employee or student must get sufficient information on mobilities' possibilities and has administrative support for international mobility. The department of foreign relationships of FM CU aims to improve students and employees' provision of information and help plan their studies and research abroad. The contact to the mentioned workplace is: www.fmed.uniba.sk/medzinarodne-vztahy/referat-zahranicnych-stykov/

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

a) *Required abilities and necessary admission requirements.*

Required abilities and necessary admission requirements for the study's admission follow the regularly updated conditions for the study's relevant grade and are published on the faculty's website seat. The admission conditions are usually yearly discussed at the Scientific Board of the Faculty of Medicine CU and are approved by the Academic Senate of the Faculty of Medicine CU in Bratislava. The conditions are published at least three months before the last day determined for submitting the application form. There are adjusted the primary conditions for applying and admission to the study programme in the material, term of the application forms, term and scope of the entrance examination. Details are on the website: www.fmed.uniba.sk/studium/doktorandske-studium/

b) *Admission procedures*

The study's admission procedures comply with the Faculty of Medicine Study Regulations, Comenius University (the Internal Regulation No. 10/2020, approved according to Art. 27 Sect. 1(a) of Act No. 131/2002 Coll. on Higher Education and on changing and amending certain acts by the Academic Senate of the Faculty of Medicine, Comenius University on 23 June 2020). The Study Regulations of FM CU is freely available on the website www.fmed.uniba.sk/fileadmin/lf/o_fakulte/dokumenty/SP_1_9_2020.pdf.

At the Dean's suggestion, the Academic Senate FM CU in Bratislava each year discusses and approves the Internal Regulation with the title: Admission procedure and conditions for admission for the PhD. Study at the Faculty of Medicine CU in Bratislava. It is a freely available minimum three months before the last day determined for the submission of the application form on the website of the faculty, in the section Dean's Internal Regulations: www.fmed.uniba.sk/o-fakulte/legislativa-a-dokumenty/vnutrofakultne-predpisy/vnutorne-predpisy-dekana/. Cited Internal Regulation contains the term for submitting the application form also with attachments, determines obligatory attachments to the Application form, dates of entrance examinations, conditions for admitting and the way of admission to the study. The attachments usually contain:

- Structured c.v. signed by the applicant,
- Certified copy of the document about the completion of the university studies. An Applicant for the study in the full-time form attaches the average of study results for particular school years.
- Graduates from an international university also submit the recognition of documents on education from abroad.
- The study's application in the external form of the study also submits the confirmation from his/her employer about the length of the employment at the time of the study's submitted application form.
- The list of published and non-published works of the applicant (or expert opinions of these works) and other documents (e.g., a diploma from conferences of the Students' scientific professional activity, documents on completed professional courses, documents on language examinations and so on).
- A short annotation of the planned project of the dissertation work elaborated together with the future supervisor,
- Confirmation on payments of the fee for admission procedure.

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

It is a new study programme. Therefore, no possibility to provide an overview of recent admission procedures. The university archives the documentation of the admission procedure, enrolment for the study and enrolment into another part of the study, a record of

study results, copies of documents on completion of the study, and other documentation for at least 25 years the day of study completion.

10. Feedback on the quality of provided education

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

At present, the internal system of Comenius University undergoes harmonisation with the accreditation standards published by the Slovak Accreditation Agency for higher education on 25 7 2020 to be harmonised to the legally stated term 31 August 2022. The formalised processes harmonised with the internal system will also be procedures of collecting, analysing and utilising relevant information for effective management of the study programme. Following the formalised processes of utilising relevant information provides the analysed information used to assess the study programme and suggestions for its adjustments and improvement.

The vice-dean of the Faculty of Medicine CU in Bratislava personally participates in the enrolment of the PhD. students into the higher years, which allows him/her a discussion with the students of all study programmes of the third degree. During the enrolment, the students are asked to share their positive and negative experience, which might increase the quality of the study programme with a relevant vice-dean or employees of the Department of Scientific-Research Activity, PhD. Study and Foreign Relations FM CU personally during office hours, via email or phone.

Some processes already provide an effective collection and analysis of information about the study programme and other activities. The faculty has a processed procedure of managing the results from the students' opinion pool, where the subjects of the submitted study programme are the exact competencies, responsibility, and procedures of particular participants. It is secured that students' feedback will be utilised at the proposal and future maintenance of the study programme quality. The pool results are beside the others discussed at the Dean's board. In cooperation with the Students Chamber of the Academic senate is provided with the popularisation of the pool among the students to reach the highest possible participation. At the same time, the Dean's board discusses the structure and the diction of the questions with students.

b) *Results of student feedback and related measures to improve the study programme quality:*

At present, the internal system of Comenius University undergoes harmonisation with the accreditation standards published by the Slovak Accreditation Agency for higher education on 25/07/2020 to be harmonised to the legally stated term 31 August 2022. Formalised processes of the harmonised internal system will provide that the collection, analyses, and utilisation of relevant information for effective management of the study programmes will suitably involve students, teachers, employers, and other involved parties.

At present, each stimulus that comes from the students is discussed at the Dean's board level, about which a teacher or supervisor will be informed if needed.

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

At present, the internal system of Comenius University undergoes harmonisation with the accreditation standards published by the Slovak Accreditation Agency for higher education on 25 July 2020, to be harmonised to the legally stated term 31 August. 2022.. Formalised processes of the harmonised internal system will provide that the collection, analyses, and utilisation of relevant information for effective management of the study programmes will suitably involve students, teachers, employers, and other involved parties.

11. References to other relevant internal regulations and information concerning the study or the study programme student (e.g., study guide, accommodation regulations, fee directive, guidelines for student loans, etc.).

Students Accommodation

<https://uniba.sk/studujinauk/byvainauk/>

<https://uniba.sk/ubytovanie/>

<https://ubytovanie.uniba.sk/> - electronic accommodation system

Guide for the accommodation process for students of Comenius University in Bratislava

https://uniba.sk/fileadmin/ruk/as/2020/Ubytovanie/Sprievodca/Sprievodca_ubytovacim_procesom.pdf

Accommodation Rules

University town of Ľ. Štúr - Mlyny CU - <https://mlyny.uniba.sk/ubytovanie/internatny-poriadok/>

University Hostel Družba CU - <https://druzba.uniba.sk/ubytovanie/ubytovaci-poriadok/>

Current information on PhD. study

www.fmed.uniba.sk/studium/doktorandske-studium/

<https://zona.fmed.uniba.sk/studium/doktorandske-studium/>

Guidelines for Students Loans

https://uniba.sk/detail-aktuality/browse/22/back_to_page/aktuality-1/article/pozicka-pre-pedagogov-a-studentov/

Psychological counselling for students

<https://uniba.sk/sluzby/psychologicka-poradna/>

Scientific Conference of PhD. Students of the Faculty of Medicine CU

www.fmed.uniba.sk/konferencia/

Students' Chamber of the Academic Senate of the Faculty of Medicine CU

www.fmed.uniba.sk/scas/

Academic Information System AIS>guides and manuals for students

<https://uniba.sk/o-univerzite/fakulty-a-dalsie-sucasti/cit/citps/ais/prirucky-a-navody/>

University email and Office

<https://uniba.sk/office365/>

Comenius University Journal "Naša univerzita"

<https://uniba.sk/nu/>