STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Lietuvos sveikatos mokslų universiteto

STUDIJŲ PROGRAMOS *LABORATORINĖS MEDICINOS BIOLOGIJA (valstybinis kodas - 621B91002)* VERTINIMO IŠVADOS

EVALUATION REPORT OF *LABORATORY MEDICAL BIOLOGY* (*state code - 621B91002*) STUDY PROGRAMME

at Lithuanian University of Health Sciences

1. **Prof. Jozef Kobos (team leader),** *academic,*
2. **Prof. Brigitte Volk-Zeiher,** *academic,*
3. **Prof. Simon van Heyningen,** *academic,*
4. **Dr. Natalija Norvilė,** *academic,*
5. **Ms. Monika Stančiauskaitė,** *students' representative.*

Evaluation coordinator – Ms. Dovilė Stonkutė.

Išvados parengtos anglų kalba
Report language – English

Vilnius
2016

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Laboratorinės medicinos biologija***
Valstybinis kodas	621B91002
Studijų sritis	Biomedicinos mokslai
Studijų kryptis	Medicina ir sveikata
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2)
Studijų programos apimtis kreditais	120
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Medicinos biologijos magistras
Studijų programos įregistravimo data	2012

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Laboratory Medical Biology***
State code	621B91002
Study area	Biomedical Sciences
Study field	Medicine and Health
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full-time (2)
Volume of the study programme in credits	120
Degree and (or) professional qualifications awarded	Master of Medical Biology
Date of registration of the study programme	2012

CONTENTS

I. INTRODUCTION

1.1. Background of the evaluation process

The evaluation of on-going study programmes is based on the **Methodology for evaluation of Higher Education study programmes,** approved by Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: *1) self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI); 2) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is **accredited for 6 years** if all evaluation areas are evaluated as "very good" (4 points) or "good" (3 points).

The programme is **accredited for 3 years** if none of the areas was evaluated as "unsatisfactory" (1 point) and at least one evaluation area was evaluated as "satisfactory" (2 points).

The programme **is not accredited** if at least one of evaluation areas was evaluated as "unsatisfactory" (1 point).

1.2. General

The Application documentation submitted by the HEI follows the outline recommended by the SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
	No additional documents beyond the annexes to the SER were provided during/before/after the visit

1.3. Background of the HEI/Faculty/Study field/ Additional information

Lithuanian University of Health Sciences (LUHS) is the largest higher institution in the area of biomedical sciences in Lithuania. The master degree study programme *Laboratory Medicine Biology* (LMB) is a new modular study programme organized at the Faculty of Medicine, Medical Academy (MA). At this faculty, in cooperation with different clinics, departments and research institutes first cycle, second cycle and integrated studies, as well as fundamental and applied scientific investigations are organized. The second cycle LMB study programme was developed in compliance with legal acts and recommended standards of the EU and RL – European Federation of Clinical Chemistry and Laboratory Medicine (EFLM).

1.4. The Review Team

The review team was completed according *Description of experts' recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on *29th March, 2016.*

1. **Prof. Jozef Kobos (team leader)**, *Head of the Laboratory of Pathology, Institute of Pediatrics, Head of the Chair of Biomedical Bases of Nursing, Head of the Department of Pathology of the Age of Development, Poland.*
2. **Prof. Brigitte A. Volk-Zeiher,** *Research Director, Head of the Research Management of the Faculty of Medicine, Freiburg University, Germany.*
3. **Prof. Simon van Heyningen,** *Emeritus Professor of the University of Edinburgh, Fellow of the Royal Society of Chemistry, Fellow of the Society of Biology, Founding member, Institute for Learning and Teaching in Higher Education, United Kingdom.*
4. **Dr. Natalija Norvilė,** *lecturer at Mykolas Romeris University, expert of UAB „Adduco“, Lithuania.*
5. **Ms. Monika Stančiauskaitė,** *student of Vytautas Magnus University study programme Biochemistry, Lithuania.*

Evaluation coordinator – Ms. Dovilė Stonkutė.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The second cycle study programme *Laboratory Medical Biology* was developed in compliance with legal requirements as well as those of relevant professional bodies as for example the European Federation of Clinical Chemistry and Laboratory Medicine and European Union of Medical Specialists. It has been arranged to meet the needs of the professions it serves and is based on studies of these needs. There is a lack of suitable laboratory specialists in this area. The programme is orientated to the actual needs of the specialists as determined by surveys and other studies. In conclusion, the programme aims and learning outcomes are based on the academic and/or professional requirements, public needs and the needs of the labour market. There is a shortage of suitable specialists at secondary-level healthcare institutions. Many of those currently working are near the end of their careers and some graduates are likely to leave Lithuania.

The study programme is consistent with the qualification offered and with type and level of Master studies. The programme gives also the abilities and skills that will be required to train qualified and innovative laboratory medicine professionals who are able to work independently and organize laboratory work. These objectives are in line with the mission defined in the Statute of LUHS and are stated to be in compliance with Lithuanian and European Union requirements. Full details of the competences that are taught and the learning outcomes of the programme are published in the information sources of LUHS.

The programme is orientated to practical activities and professional education. Its objectives include educating people with the specialist knowledge in the field of laboratory medicine as well as the scientific and professional competences for work and educating a personality with critical and modern thinking and also to effectively work in a team.

To gain knowledge and practical skills required for working, organization and management to ensure the quality in multidisciplinary clinical investigators of health care institutions and laboratories of other institutions is the purpose of the programme. Also, the programme gives an opportunity to gain knowledge in medical laboratory science, principles of disease laboratory diagnostics, laboratory activities and their organization, as well as the legislative base of activities. The learning outcomes give an opportunity to learn theoretical and practical aspects for performing, evaluation and interpretation of laboratory tests in fields of clinical chemistry on

the basis of general principles of laboratory diagnostics and also to learn theoretical and practical aspects of organization of laboratory work and to carry out and implement quality management, safety, quality control and research.

The learning outcomes are well defined and give an opportunity to gain and deepen scientific knowledge of laboratory medicine as well to increase and expand practical skills in specialized areas of laboratory diagnostics and acquire knowledge necessary in laboratory medical biology.

Information about the study programme, its duration, objectives and learning outcomes, degree awarded professional qualification and other details are published in the information sources of LUHS. Official information is provided and regularly updated on the LUHS website.

In summary, the name of the programme, its learning outcomes, content and the qualifications offered are compatible with each other and are orientated to the actual needs for laboratory specialists, as well as to innovative laboratory medicine professionals who are able to work independently and organize laboratory work.

The University feels that there is room for improvement in its cooperation with social partners and their expectations of graduates but reviewers did not find any particular dissatisfaction. The study programme is focused not only on basic diagnostic areas of laboratory medicine or laboratory work in healthcare institutions, but also on the work needed in research and training laboratories.

2.2. Curriculum design

The curriculum design of the Master's study programme of the second cycle in the full-time programme of two years organized at the Faculty of Medicine, Medical Academy (MA) is delivered in close collaboration with different clinics, departments and research institutes. The study programme clearly follows the legal acts and recommended standards of the EU and Lithuania, to the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), European Union of Medical Specialists (UEMS), Section of Laboratory Medicine/Medical Biopathology, Directive of the European Parliament and of the Council 2005/36/EB, scientific and practical achievements of the World Health Organization (WHO), as well as the requirements of the Lithuanian Medical Standards MN 68:2008, Law on Science and Studies of the Republic of Lithuania, the order of the Minister of Education and Sciences, on approval of description of general requirements for degree awarding second cycle study programmes (No V-826 June 3, 2010). It is also compatible with the general and special requirements for study programmes by the Ministry of Education and Sciences (No 1-01-18, March 3, 2010; No 1-01-163, December 20, 2010) and to the Programme Guide, Vilnius, 40 p., 2011 (Nr. VP-2.2-SMM-08-V-01-001). The LMB curriculum design also meets legal requirements on approval of description for study cycles (No. V-2212, November 21, 2011).

The scope of the two-year study programme LMB (621B91002) contains 120 credits points (CP). The credits points are distributed evenly among the semesters (4 semesters) with each from 5 to 10 credit points, and avoid mostly repetitive themes. In this complex and multidisciplinary study programme, 10 obligatory and 8 elective study courses are established and it encompasses several very important study fields: Laboratory Biochemistry, Haematology, General Clinical Testing, Immunopathology, Haemostasis, Immunology, Microbiology and Genetics. The study subjects and their specific volumes are shown in more detail in Table 5 (SER p. 16) and in Annex 1.1.-1.17. Obligatory modules comprise 60 credit points, elective subjects 15 CP and 45 CP were given for the preparation of Master's thesis.

Compulsory subjects are Biochemistry and Haematology which comprise 50% (30 CP), the highest amount, in the study programme. The content of these two subjects is excellent, reflecting high international standards of science according to the latest achievements and technologies. The amount and scope of the study subjects are appropriate for the achievement of the intended learning outcomes. To further improve and focus the study programme, the module Biochemistry could be changed in some parts to provide more practical work and individual skills, whereas the Immunology subjects or some Special Pathology subjects could be reduced and partially more focussed on essential and important issues. In particular, some current issues, e.g. of molecular biology methods in oncology should be addressed.

The amount of self-study hours accounts for 30% of the total study programme which seems to be adequate. The study programme takes into account the fact, that students start their studies from different levels of the undergraduate training. Therefore, a list of obligatory and elective subjects in the first and second semesters is provided to give students the possibility to choose their own sequence of study subjects. The study programme is focussed not only on basic diagnostic areas of laboratory medicine or laboratory work in healthcare institutions, but also on the work needed in research and training laboratories. For this, study field subjects comprise a number of very meaningful core competences connected closely to the needs of labour market for independent working professionals, e.g. general principles of work, organisation at Clinical Laboratory, Clinical Biochemistry and Laboratory Diagnostics, Basic and Internal Medicine and Clinical Examination, General Clinical Tests and Laboratory Diagnostics (I semester), Clinical Laboratory Haematology and Immunopathology Laboratory Diagnosis of Coagulation Disorders, Pathological Anatomy and Cytopathology (II semester), Clinical Microbiology and Virology (III semester). In this context, the study programme is very well balanced and harmonized and completed with different elective courses to gain a broad knowledge not only in clinical competences and laboratory work skills, but also knowledge and practical competences in biotechnology, manual and instrumental analysis, interpretation of results. The students are very well familiarized and prepared for work with special safety rules and requirements for workplace preparation. To further complete this excellent study programme, some ethical issues and information about medical law should be addressed.

The scope of the study programme comprises 70% of classwork, 30% of self-studies and not less than 40% of classwork is allocated for practical activities. Theoretical knowledge is provided in lectures, special seminars, consultations and self-study activities. At the end of every subject course, a short written examination is taken, which is very helpful and accepted by students and for teachers' feedback.

The content of the subjects is consistent with the type and level of the study programme and appropriate for the achievement of the intended learning outcomes based on knowledge, abilities and skills necessary to practice in the area of clinical laboratory diagnostics and carry out research, training and development activities.

For the development of scientific work competences, a number of special programmes are offered (e.g. Fundamental Epidemiology, Methods of Data Analysis). Practical skills in independent work are also developed during scientific research and provided during all four semesters. If possible, teaching hours should be reduced towards more time for research for some students (e.g. upcoming PhD students) and for those with special scientific interest, short-term visits (e.g. 1-2 weeks) in specialized laboratories abroad should be offered.

The requirements of the final master work and the course of scientific work follow the LUHS (LUHS) regulations of integrated studies (LUHS Senate decision No. 32-03, June 7, 2013). The

final master's thesis is publicly defended according to the regulations in LMB programme (Council of the FM, June 10, 2015, No. 27).

2.3. Teaching staff

There are 26 staff members participating in the programme, including 10 professors and 8 associate professors. More than 84% of staff members have a scientific degree (PhD), and 38.5% of major study field subjects' volume is taught by teachers holding a Professor's academic degree. All practice teachers have special licenses and no less than 7 year professional experience in the subject they teach. Approximately half of the teachers are younger than 50-years, which indicate a good potential for the future. Staff members are constantly improving their teaching competences; they participate in courses organized by Study Centre for Teachers' Educational Competence. The legal requirement that 80 percent of the subjects in the study field be taught by scientists (researchers who have a PhD) is met. Also, the Lithuanian legal requirements in terms of qualifications and experience are met. In conclusion, staff members have high qualifications needed to ensure the learning outcomes and their number is adequate.

Teachers' turnover rate is quite high (less than 35 percent), but according to the SER, there were no changes among scientific workers (their number still is more than 80%). Teaching staff is selected by means of public competition (except for invited teachers and scientists) for a fixed-term period of five years. The recruiting procedure for the teaching positions at the faculty is enacted by the Law of Higher Education. The teachers' pedagogical, scientific, and practical experience is evaluated during performance evaluation procedures organized every five years.

Although the team note that the majority of academic staff involved in the programme is active in scientific work, demonstrate active research and reasonable number of publications in the leading national and/or international journals in the last five years, there is still considerable scope for a wider number of staff to be more research active, and hence to publish more scholarly work. This is crucial for the programme to facilitate student progression to the doctoral level. Therefore the team would encourage the University to support staff to increase publications in international journals; for example, by assisting in writing project applications; organizing workshops on academic writing; and financially supporting research. Also, communication between teachers and programme committee should be more institutionalized on a regular basis (e.g. twice a year) with fixed dates.

As teachers, students, alumni and social partners noted, the teachers of Laboratory Medicine Biology programme actively participate in different training courses in Lithuania. They give lectures on Laboratory Diagnostics at postgraduate courses, professional societies, such as the Lithuanian Society of Laboratory Medicine, the Lithuanian Society for Immunology and others.

Unfortunately, there was no information provided in SER and it was not clear from the meeting with staff about the student/teacher ratio and the ratio between the number of students preparing their graduation theses and the number of scientific supervisor.

LUHS has established mechanisms for the professional development of the teaching staff necessary for the provision of the programme. However, staff noted that usually only active participation in conferences (presentation of research results) is supported by the University. Currently 3 teachers of *Laboratory Medicine Biology* provided trainings for specialists from other countries and institutions in the Republic of Kazakhstan, and this a good example of sharing professional experience. The experts' team would like to stress that the short-term and long-term mobility of teachers still should be strongly promoted – participation in workshops, seminars, scientific internships abroad, teaching in European universities (e.g. via Erasmus+

programme), etc. Also, visiting lectures should be engaged in the programme. It is advised that the profile of the teaching staff could be improved by recruiting/inviting lecturers from among younger generation specialists from Lithuania (e.g. graduates of programmes in Medicine and Health, etc.) and guest lecturers from abroad because scientific exchange is important as the field of laboratory medicine biology is rapidly evolving.

2.4. Facilities and learning resources

The quality of infrastructure of the buildings depends slightly on the departments, clinics and research institutes participating in the study programme. The conditions of classrooms, auditoria and research facilities in the biomedical science institutes and clinical practical laboratories are excellent; there are plenty of rooms. Teaching and learning equipment is modern, more than adequate both in their size and quality. Most clinical laboratories are very well maintained, and already licensed according to clinical and medical law by the Republic of Lithuania. Some classrooms and auditoria in the new buildings were empty, but they will be fully furnished according to the demand of students work later in the year, the financial requirements are already fulfilled. All teaching rooms are compatible with the requirements of safe working conditions and hygiene. Auditoria have enough chairs with convertible desks, screens, projectors and computers.

Overall, the premises for studies is on the top level both in size and quality and for practical work in laboratories the equipment is extraordinarily modern and good, e.g. 20 sets of microscopic preparation for studies of cell biology and genetics, molecular cytogenetics facilities (FISH), 25 light microscopes, binocular microscopes, mass spectrometry, UV spectrometers, bioluminescence assay systems, DNA sequencing machines (Pyrosequencing including latest computer software), and so on are available. Some rooms, but only in the clinical departments, will need to be larger for the expected higher numbers of students in the future.

According to the self-evaluation report, the classrooms at the Institute of Biological Systems and Genetics have been renovated and equipped with multimedia and computers. If the need arises, other auditoria and classrooms of LUHS can be used, which have from 20 to 250 working places.

The institution also says that it has the biggest and the most modern library in the Baltic countries with computerised working places and Wi-Fi. In fact, the conditions of the library are excellent and the staff of the library are doing a good job in catching up with the very latest library practices, e.g. providing teaching staff and students access to the electronic databases or giving instructions in using databases by themselves. Reviewers were impressed by what they saw and students confirmed that it met their needs. There is also a LUHS virtual library which allows students access to all necessary material, and is constantly reviewed.

Teachers on the programme are themselves well qualified and have published textbooks and teaching books. Most of the literature available is in English and, judging by the statements of students, there is sometimes a shortage of relevant material in Lithuanian. Despite the fact, that the library provides the very recent papers, textbooks, journals or access to the newest databases (e.g. Pubmed, OMIM, Gene Cards, CentoMD), the team found that the bibliographical sources cited in various papers for students were still mostly traditional books which were sometimes older than 3-5 years. Overall, the higher education institute has adequate arrangements for student's practice.

2.5. Study process and students' performance assessment

The admission of students into the programme started in 2013. Because it was a new programme only one group of students was admitted at first: 10 students were admitted (1 of them was not financed by the state) in 2013, 7 students were admitted in 2014. The course of studies is regulated by the LUHS study regulations (First and second study cycle and integrated studies approved by the Senate of LUHS Resolution No. 2-06.November 29, 2010).

The admission criteria are listed in the LUHS admission rules. The admission grade is calculated from the mean grade in the diploma annex, evaluation of scientific work and the evaluation of the entrant's motivation. The timetable of studies is designed in accordance with LUHS regulations of first and second cycles of studies (Senate of LUHS Resolution No. 2-06 November 29, 2010). Studies are regulated by the curriculum and timetable, which can be found on the LUHS website under study information system (LUHSSIS).

The study programme is proposed as a second step of the bachelor programme as further studies. During these studies students get wider and deeper knowledge of laboratory diagnostics from the medical point of view. The study cycle begins with the theoretical material of a certain field of laboratory medicine, a master student acquires theoretical knowledge of testing methods and procedures reading descriptions and also watching how they are performed. Later the student performs tests himself under the supervision of teachers and laboratory assistants.

Classwork (contact hours) comprises 70 % of the study programme, while 30 % is delivered for self-studies. Programme subjects cover the main fields of laboratory diagnostics, which are indispensable at laboratories of every healthcare institution and as the University declares "do not depend on the level of the service". The programme consists of compulsory and elective subjects. Elective subjects comprise 25 % of the programme. Because of some differences in the initial preparation of the students, compulsory elective subjects and non-compulsory elective subjects are included in the list of subjects in the first and second semesters. If some subjects as for example General Biochemistry and Human Physiology during bachelor studies were not passed, a student must study those subjects as compulsory electives during master studies. If the student did study those subjects, he can freely choose other elective subjects. In summary, the organisation of the study process ensures an adequate provision of the programme and the achievement of the learning outcomes but students would like to learn more in specialized laboratories.

The assessment of students' knowledge consists of the evaluation of knowledge and skills, which is done during studies and after the completion of study course. During the study, formative and summative assessments are applied on the basis of the LUHS Senate decision No 25-07, December 14, 201243. Final assessment consists of cumulative part and final test grade. The application of cumulative part of the final grade ensures the consistency of studies and the assessment system of students' performance is clear, adequate and publicly available.

Detailed examination procedure and the procedure of liquidation of academic debts is described in the LUHS study regulations (Senate of LUHS Resolution No. 2-06.November 29, 2010).

LMB master studies are completed by the defence of the scientific Master thesis and the final exam, which are organized according to the study plan and the regulations of LMB programme thesis preparation and defence (Regulations for laboratory medicine biology master final work, confirmed by the Council of the Faculty of Medicine, June 10, 2015, No.27).

Academic support for students is provided in different ways: the students can get all the needed information about the studies from the administrators and curators, who help to solve the

problems. They get all the necessary information about the aim and objectives of the programme, alteration, possibilities of studies according to the individual programme, possibilities of revision of study subject, retaking of the exams and about the convenient timetable.

The career centre provides the students with the employment possibilities. Successful students get scholarships. The delivery of students' scholarships and social payments is defined in the documents, confirmed by LUHS Senate. LUHS students can live at the university hostels, which are allocated according to the LUHS hostel delivery rules. University has a sports centre, which students can actively attend.

The study programme guarantees a high quality assurance using different feedback mechanisms and questionnaires between all participating partners. Very important is the institutional mechanisms and engagement to improve the study programme continuously and to incorporate the latest achievements in sciences, art and technologies.

The first graduates of LMB programme graduated from the university in 2015. All of the 8 graduates found a job or continued the job and for now professional activities of graduates meet the programme providers' expectations.

The students mobility is still very low e.g. in the participation in exchange programmes. The main reasons are the short period of programme implementation (2 years) and the unwillingness of students who have jobs in Lithuania.

Employers would have liked the students to have had more practical experience, but this is not easy to achieve.

Students reported that they had not been proactive in planning new programmes and they had not participated in creating the learning outcomes, but that their concerns were listened to and acted upon. Some would have welcomed the opportunity to study abroad, but the students of this programme have not yet participated in exchange programmes, the main reason being the short period of programme implementation and the unwillingness of students, who have jobs in Lithuania.

The reviewers found the programme to be well designed and to meet the needs of students. Employers reported that the graduates were well prepared for the world of work. Graduates had had little difficulty in finding suitable jobs, for which the programme had prepared them well.

2.6. Programme management

LUHS applies an internal study quality assurance system based on sharing responsibility for the quality of studies at several levels – Study Quality Monitoring and Improvement Commission, Faculty Board, Dean's office, Study Centre, Science and Research Centre, Postgraduate Study Centre, Rectorate and International Relations and Study Programme Committee, which is formed from teachers, a representative of students and representatives of social partners. Strong vertical lines of quality assurance clearly allocate the responsibilities for the implementation of the programme, provides valuable support on emerging problems.

LUHS implements various procedures for ensuring the quality of studies, meaning that information and data on the implementation of the programme are regularly collected and analyzed: there is a student results assessment programme, the opinions of teachers, graduates, students and social partners are been evaluated, teacher pedagogical qualification development system is established. Social partners participate in the Master's thesis defence procedure.

The experts' team would like to point out that despite the fact that a formal student feedback system is established, it is not providing reliable results as currently the participation in filling the questionnaires is low and teachers receive more detailed feedback via informal conversations with students. It would be worthwhile to improve the student feedback system, and to make it regular (e.g. twice per academic year, at the end of every semester) and more formal. Communication between teachers and programme committee should be more institutionalized on a regular basis (e.g. twice a year) with fixed dates. The results of the student survey show that students are generally satisfied with the teaching process, especially with the friendly behaviour of teachers and their quick adaptation to the changing conditions.

Feedback data about the employment of graduates is being collected only for a half of year, because the first graduates (8 alumni) graduated from the university in 2015. According to the collected data and alumni comments during the meeting, all graduates are employed in the study area – in public or in private sphere.

The outcomes of internal evaluations of the programme are used for the improvement of the programme – from the meeting with students and social partners it was clear that during the evaluating and monitoring of the quality of studies, attention is paid to the demands of students, teachers' work, optimality of the programme, and the necessary changes are made, e.g. for the optimization of the programme and for the achievement of the objectives of the studies, amendments were made, merging similar subjects.

At the same time there are shortcomings which the expert team identified. The team considers that effective quality assurance relies on multiple measures and implies skilful use of all possible resources, detailed elaboration of future guidelines. There should be established formal and regular system of communication and exchange with social partners and potential employers – they could participate in developing programme aims, add their questions to opinion polls, share their experience during lectures, participate in review of program aims. Invitation of prominent local and foreign experts on Laboratory Medicine Biology, more detailed communication with partners about milestones, shortcomings and future development of the programme would be also welcome.

In conclusion, the internal quality assurance measures applied now could be improved to make it more effective and efficient. The experts' team would recommend considering establishing a more formal link via an alumni network, including regular meetings with the staff and also with the final year students, who would benefit from meeting with alumni and learning of their achievements.

III. RECOMMENDATIONS

1. Introduce the subjects of Ethical Issues and Medical Law in the study programme.

2. Biochemistry issues could be strengthened to provide a broader and profounder knowledge more focussed on the need of labour market and more practical individual skills should be provided, especially in the field of oncology with modern molecular biology methods.

3. Students would like to learn more in specialized laboratories.

4. Facilities, especially in the clinical departments, should be adapted to the expected increasing number of students. So far there is already shortage for 10-12 students. The expected number of students will be 24.

5. Communication between teachers and programme committee should be more institutionalized on a regular basis (e.g. twice a year) with fixed dates.

6. It would be worthwhile to improve the student feedback system, make it regular (e.g. twice per academic year, at the end of every semester) and more formal.

7. The team recommends considering establishing a more formal link via an alumni network, including regular meetings with the staff and also with the final year students, who would benefit from meeting with alumni and learning of their achievements.

IV. SUMMARY

The second cycle programme *Laboratory Medical Biology* was developed in compliance with legal requirements as well as the principles set out by relevant professional bodies. It has been arranged to meet the needs of the professions it serves and is based on the research of these needs. The programme is oriented towards practical activities and professional education.

The curriculum of the Master's study programme of the second cycle in full-time programme of two years organized at the Faculty of Medicine, Medical Academy (MA), has been designed in close collaboration with different clinics, departments and research institutes. The study programme strongly corresponds to legal acts and recommended standards. The study programme guarantees a high quality assurance using different feedback mechanisms and questionnaires between all participating partners.

There are 26 staff members participating in the programme, including 10 professors and 8 associate professors. More than 84% of staff members have a scientific degree (PhD), and 38.5% of major study field subjects' volume is taught by teachers holding a Professor's academic degree. The team notes that part of academic staff involved in the programme is active in scientific work, they demonstrate active research and reasonable number of publications. LUHS has established mechanisms for the professional development of the teaching staff necessary for the provision of the programme.

All teaching rooms are compatible with the requirements of safe working conditions and health considerations. Auditoria are equipped with a sufficient number of chairs with convertible desks, screens, projectors and computers. The institution has the biggest and the most modern library in the Baltic countries with computerised workplaces and Wi-Fi. Despite the fact that the library

provides recent papers, textbooks, journals or access to the newest databases, the team found that the bibliographical sources cited in various papers for students were still mostly traditional books which were sometimes older than 3-5 years.

The admission of students into the programme started in 2013. Because it was a new programme only one group of students was admitted at first. Because of some differences in the initial preparation of the students, compulsory elective subjects and non-compulsory elective subjects are enrolled into the list of subjects in the first and second semesters. The assessment of students' knowledge consists of the evaluation of knowledge and skills, which is done during studies and after the completion of study course. The students mobility is still very low e.g. in the participation in exchange programmes.

LUHS implements various procedures for ensuring the quality of studies, meaning that information and data on the implementation of the programme are regularly collected and analyzed: there is a student results assessment programme, the opinions of teachers, graduates, students and social partners are taken into consideration, teacher pedagogical qualification development system is established. Social partners participate in the Master's thesis defence procedure. The feedback data about the employment of graduates has been collected only for half a year to date, because the first graduates (8 alumni) graduated from the university in 2015. According to the collected data and alumni comments provided during the meeting, all graduates have succeeded in finding employment.

V. GENERAL ASSESSMENT

The study programme *Laboratory Medical Biology* (state code – 621B91002) at Lithuanian University of Health Sciences is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	4
3.	Teaching staff	4
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	**21**

*1 (unsatisfactory) - there are essential shortcomings that must be eliminated;
2 (satisfactory) - meets the established minimum requirements, needs improvement;
3 (good) - the field develops systematically, has distinctive features;
4 (very good) - the field is exceptionally good.

Grupės vadovas: Team leader:	Prof. Jozef Kobos
Grupės nariai: Team members:	Prof. Brigitte Volk-Zeiher
	Prof. Simon van Heyningen
	Dr. Natalija Norvilė
	Ms. Monika Stančiauskaitė

Vertimas iš anglų kalbos

LIETUVOS SVEIKATOS MOKSLŲ UNIVERSITETO ANTROSIOS PAKOPOS STUDIJŲ PROGRAMOS *LABORATORINĖS MEDICINOS BIOLOGIJA* (VALSTYBINIS KODAS - 621B91002) 2016-05-20 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-109 IŠRAŠAS

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Lietuvos sveikatos mokslų universiteto studijų programa *Laboratorinės medicinos biologija* (valstybinis kodas – 621B91002) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	4
3.	Personalas	4
4.	Materialieji ištekliai	4
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	**21**

* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)
2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)
3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)
4 - Labai gerai (sritis yra išskirtinė)

<...>

IV. SANTRAUKA

Antrosios pakopos Laboratorinės medicinos biologijos studijų programa atitinka teisinį reglamentavimą ir atitinkamų profesinių institucijų nustatytus principus. Ji parengta taip, kad atitiktų tam tikrų profesijų poreikius, ir yra pagrįsta šių poreikių tyrimu. Studijų programa orientuota į praktinę veiklą ir profesinį mokymą.

Lietuvos sveikatos mokslų universiteto Medicinos fakulteto vykdomos antrosios pakopos dvejų metų trukmės nuolatinės magistrantūros studijų programos turinys buvo kuriamas glaudžiai bendradarbiaujant su įvairiomis klinikomis, katedromis ir tyrimų institutais. Studijų programa visiškai atitinka teisės aktus ir rekomenduojamus standartus. Studijų programa garantuoja aukštos kokybės užtikrinimą, nes veikia įvairūs grįžtamojo ryšio mechanizmai ir naudojami visų dalyvaujančių šalių klausimynai.

Studijų programą dėsto 26 dėstytojai, iš jų 10 profesorių ir 8 docentai. Daugiau nei 84 % dėstytojų turi mokslų daktaro laipsnį, o 38,5 % pagrindinės studijų krypties dalykų dėsto profesoriaus mokslinį vardą turintys dėstytojai. Ekspertų grupė pažymi, kad dalis studijų programos dėstytojų aktyviai dalyvauja tiriamojoje veikloje, vykdo tyrimus ir skelbia pakankamai publikacijų. LSMU veikia dėstytojų profesinio tobulinimosi mechanizmai, reikalingi vykdant studijų programą.

Visos mokymo patalpos atitinka saugaus darbo sąlygų ir sveikatos reikalavimus. Auditorijose yra pakankamai sėdimų vietų su atverčiamais stalais, monitorių, projektorių ir kompiuterių. Institucijoje yra didžiausia ir moderniausia biblioteka Baltijos šalyse su kompiuterizuotomis darbo vietomis ir bevieliu interneto ryšiu. Nepaisant to, kad bibliotekoje prieinami naujausi rašto darbai, vadovėliai, žurnalai ir suteikiama prieiga prie naujausių duomenų bazių, ekspertų grupė pastebėjo, kad studentų darbuose cituojami bibliografiniai šaltiniai iš esmės apima tradicines knygas, kartais net senesnes nei 3–5 metai.

Studentų priėmimas į šią programą prasidėjo 2013 m. Kadangi tai nauja programa, iš pradžių buvo priimta tik viena studentų grupė. Dėl tam tikrų pradinio studentų pasirengimo skirtumų privalomi ir neprivalomi pasirenkamieji dalykai įtraukti į pirmojo ir antrojo semestrų dalykų sąrašus. Studentų žinių vertinimas apima žinių ir gebėjimų įvertinimą, vykdomą studijuojant dalyką ir jį pabaigus. Studentų judumo rodiklis vis dar labai žemas, pavyzdžiui, mažai jų dalyvauja mainų programose.

LSMU įgyvendina įvairias studijų kokybės užtikrinimo procedūras, o tai reiškia, kad reguliariai renkama ir analizuojama informacija ir duomenys apie programos įgyvendinimą: yra studentų rezultatų vertinimo programa, atsižvelgiama į dėstytojų, absolventų, studentų ir socialinių partnerių nuomonę, veikia dėstytojų pedagoginės kvalifikacijos tobulinimo sistema. Socialiniai partneriai dalyvauja magistro darbų gynimuose. Grįžtamojo ryšio duomenys apie absolventų įdarbinimą renkami tik pusmetį, nes pirmoji laida (8 absolventai) baigė šią studijų programą 2015 m. Remiantis surinktais duomenimis ir absolventų komentarais, pateiktais per susitikimą, visiems absolventams pavyko įsidarbinti.

<…>

III. REKOMENDACIJOS

1. Į studijų programą įtraukti Etikos ir Medicinos teisės dalykus.
2. Reikėtų stiprinti biochemijos srities dalykus, siekiant suteikti platesnių ir gilesnių žinių, labiau orientuotų į darbo rinkos poreikius; taip pat reikėtų ugdyti daugiau praktinių individualių gebėjimų, ypač onkologijos srityje, taikyti šiuolaikinius molekulinės biologijos metodus.
3. Studentai norėtų mokytis labiau specializuotose laboratorijose.
4. Materialioji bazė, ypač klinikų skyriuose, turėtų būti pritaikyta numatomam didesniam studentų skaičiui. Kol kas vietų trūksta 10–12 studentų. Numatomas studentų skaičius ateityje – 24.
5. Dėstytojų ir studijų programos komiteto bendravimas turėtų būti oficialiau įtvirtintas ir reguliaresnis (pvz., du kartus per metus), nustatant atitinkamas datas.
6. Praverstų patobulinti studentų grįžtamojo ryšio sistemą, padaryti jį reguliaresnį (pvz., du kartus per akademinius metus, kiekvieno semestro pabaigoje) ir formalesnį.
7. Ekspertų grupė rekomenduoja apsvarstyti, kaip užmegzti formalesnį ryšį per alumnų tinklą, įskaitant reguliarius susitikimus su personalu ir paskutinio kurso studentais, kurie gautų naudos iš tokių susitikimų su absolventais ir pasimokytų iš jų pasiekimų.

<…>

Paslaugos teikėjas patvirtina, jog yra susipažinęs su Lietuvos Respublikos baudžiamojo kodekso 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

Vertėjos rekvizitai (vardas, pavardė, parašas)