



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

**VILNIAUS UNIVERSITETO
PROGRAMOS *MEDICINOS BIOLOGIJA* (621B91001)
VERTINIMO IŠVADOS**

**EVALUATION REPORT
OF *MEDICAL BIOLOGY* (621B91001)
STUDY PROGRAMME
AT VILNIUS UNIVERSITY**

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Išvados parengtos anglų kalba

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	Medicinos biologija
Valstybinis kodas	621B91001
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	1999-09-21

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	Medical Biology
State code	621B91001
Study area	Biomedical Sciences
Study field	Medicine and Health
Kind 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	21/09/1999

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The Centre for Quality Assessment in Higher Education

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I. INTRODUCTION

The Centre for Quality Assessment in Higher Education in Lithuania (SKVC) has started the procedure of evaluation of the Master's studies programme in Medical Biology at the Medical Faculty at Vilnius University according to the Procedure for the External Evaluation and Accreditation of Study Programmes approved by Order No ISAK-1652 of 24 July 2009 of the Minister for Education and Science of the Republic of Lithuania (Official Gazette, 2009, No 96-4083) and in accordance with the Methodology For Evaluation Of Higher Education Study Programmes (Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education)

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II. PROGRAMME ANALYSIS

The MSc study programme in Medical Biology is a multidisciplinary training programme. It was introduced only in a year 2000 and externally evaluated in 2005. The aim to train medical biologists is consistent with the requirements laid down in the European Directive 2005/36/EC.

1. Programme aims and learning outcomes

The aims of the Study Programme are defined and convincingly based on academic and professional requirements in the rapidly developing field of biomedicine. The programme equivocally states the goals to prepare young researchers with a broad academic education in laboratory medicine and provide the skills for working in the field of biomedical research together with the healthcare professionals. There is an emphasis to train the student towards independent research work, evidence-based problem solving in laboratory medicine and continuous professional development. However the aim of the study programme should be wider in regard to theoretical and general knowledge in all study subjects. Current learning outcomes (Table 2, SER) have a bias to be orientated towards training in technical aspects. According to the scope of the programme the team-work is not efficiently promoted. Also the exchange of experiences on the interim seminars among students, as well as involving teachers and laboratories supervising MSc theses should be useful for the best student's knowledge and skills.

The learning outcomes and competences of the study programme (SER, Table 2, pp.8-10) are provided in detail and precisely. They are well defined and fully consistent with the requirements of MSc level studies in biomedicine. The name of the programme, its learning outcomes, content and qualifications provided are compatible with each other. Study programme is built up logically and the 15 sub-topics are mutually integrated. The listed learning outcomes from each sub-topic represent a combination of training in basic theoretical knowledge, practical skills, learning to analyse and interpret data in biomedical research and practice, as well as in problem-solving and wider scope in the field. The content of the MSc study programme in Medical Biology corresponds to the qualification requirements set out in European and National Qualification Framework and orders of the Ministry of Education and Science, and the Minister of Health of the Republic of Lithuania. The sub-topics 14-15 (SER, Table 3, p.10) specifically address the training in professional laboratory practice and carrying out the scientific research and application of the scientific principles in biomedicine. It should be noted that the learning outcomes are not strictly related to practical skills performed in the modern pathological laboratories, as for example diagnostic immunohistochemistry. Also the learning outcomes related to Anatomic Pathology are not precisely oriented to research nor to management of

quality control of procedures provided in a modern pathology laboratory. It is postulated that the learning outcomes should be further expanded and also related to the laboratory management, in order to train professionals who are able to manage modern and up –to- dated pathological and molecular laboratory.

2. Curriculum design

The curriculum design of the MSc study programme in Medical Biology of Vilnius University corresponds to the Law of Higher Education and Research of the Republic of Lithuania (2009-04-30, No.XI-242), the Law on the Regulations of the Requirements for the Master's study Programmes (2010-06-03, No. V-826), Vilnius University Study programmes requirements approved by Senate Commission (resolution 2012-06-21, No. SK-2012-12-4), and the EU 2005/36 directive. Therefore, the Study Programme meets the legal requirements. The scope of the two-year study programme is 120 credits. The credits are distributed evenly among the semesters, with 30 ECTS workload distributed to every semester. The study subjects (modules) (Table 3, p.13 of SER) are distributed evenly and in accordance with the legislation. No more than 5 study modules are introduced in the timetable during a semester. The workload of the student comprises 3200 hours. Auditorium's work (contact hours) cover 70% of total hourly time and include lectures, seminars and laboratory practice. Self-study covers 30% of time of each study module. The study programme is divided to provide one semester of introductory subjects (23 credits), two semesters of special education subjects (48 credits) and the last semester is devoted to laboratory practice (6 credits), scientific work (in total 37 credits from 1st to 4th semester) and preparation of Master thesis (6 credits) resulting from independent, supervised research. With the completion of the described master-level studies in Medical Biology, graduates are expected to present knowledge and skills for independent scientific work and service in diagnostic laboratories.

Learning outcomes of the courses are defined according to the study programme and in accordance with the legislation. In the majority of modules, every outcome has its specific study methodology and assessment methods so the outcomes fulfilment can be measured on the basis of the assessment (examination results, defence of MSc thesis). The scope of the study programme is appropriate to achieve intended learning outcomes and meet the Lithuanian and European legislation requirements. The content of study subjects meets the aims of the programme of Msc level studies. The learning methodology includes the modern pedagogical approaches such as student centered learning and problem – based learning approach.

In accordance with the recommendations of the previous evaluation (SER, p14), three major changes had been introduced: (i) replacement of “Physics” with “Biotechnology and Informatics in biomedicine”, which is more relevant to this study programme; (ii) forming a separate study module “Research work”, which is carried out throughout 1st-4th semester under the guidance of a supervisor; (iii) introducing “Professional laboratory practice”. The latter takes place at Vilnius University Hospital, in the Centre of Laboratory Medicine. However some of the previous recommendations from the 2005 evaluation were not completely implemented or the measures taken so far have not been quite adequate, for example: *‘program goals and objectives have to reveal more clearly the core of the master’s program purpose - to prepare students for the independent research work that requires a deeper knowledge and skills’* (suggestion 1, External assesment 2005), and *‘to add to the list the following subjects: “Biometrics”, “Professional foreign language”* (suggestion 2, External assesment 2005). The portfolio of the optional courses already organized at the university should serve to diversify existing courses and respect the previous recommendations in 2005, citation *‘There is a need to give graduate students an opportunity to study the proposed alternative elective free elective subjects’*.

Although aiming to first provide more general and then specialized subjects, there is the exception of this principle with the subjects of “Biochemistry of hormones and vitamins” (1st semester) and “Clinical biochemistry” (3rd semester). Obviously, the former subject is more specialised than the later and the order of these subjects could be switched. The study programme has also partially repetitive subjects “Basic immunology and cancer biology” (2nd semester), “Laboratory hematology” (3rd semester) and “Clinical immunology and immunohematology” (3rd semester). The evaluation team recommends that these subject could be merged into two modules, one focused on immunology (2nd semester) and other on hematology (3rd semester); (ii) then, the unassigned 160 work hours (6 ECTS) could be added to “Research work” in order to be upgraded to 320 work hours (12 ECTS).

Main educational literature for the Study Programme as listed in SER (Table 8, pp.22-23) does not include books in human genetics (e.g. study subject “Human molecular genetics and inherited metabolic diseases”, 6 ECTS), biotechnology, statistics, bioinformatics, which are relevant to various courses of the programme.

3. Staff

This programme engages academic staff of 30 teachers including 10 professors, 11 associate professors, 6 lectures and 3 assistant lectures. The workload does not exceed the legal limit.

Professors and associate professors make 70% of the teaching staff, which is above the legal requirements (40%). 90 % of the teachers have a scientific PhD-degree, which exceeds the legal requirement for the master studies. In conclusion, the staff has high qualifications to ensure learning outcomes. The number of teachers (30) involved in this programme is adequate for the number of entering students (annually 4-12). 85% of teachers have >10 years experience in teaching.

Teachers' turn-over is moderate (0-2 persons annually in each teachers level), but this may be due to overall small number of involved teachers (30) and more specialized requirement of teachers for MSc (e.g. compared to BSc) level studies, who are small in numbers in a small country. Teachers are recruited via an open call for applications (for 5-year term), guided by the regulations set up by the Commission of the Senate). The recruiting procedure for the teaching positions at the faculty is enacted by the Law of Higher Education.

All the teachers are active researches regularly participating in the scientific conferences. The strong part of the staff is that it demonstrates active research and reasonable number of publications in the leading national and/or international journals in the last five years: in total 394 publications, including 174 in internationally peer-reviewed journals listed in ISI WoS. Across the last 5 years, the overall average number of scientific articles per teacher is 13, and average number of publications in international ISI WoS journals is close to 6. Also a significant number of teachers participated in national and international projects and societies. In summary, the University and the faculty provide the adequate condition for the professional development for the study program. Generally, the teachers are up to date with the latest scientific achievements in the respective areas.

One should observe that the average age (around 50y) of the staff is high and the turnover is low, as well as the curriculum in academic exchange is moderate and there is low participation in Erasmus Exchange 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 the programme) and guest lecturers from abroad because turnover and scientific exchanges is important as the field of Medical biology is rapidly evolving.

The mobility of teachers and students must be strongly promoted, and mechanisms for mobility promotion should be instituted. Also visiting lectures should be engaged.

4. Facilities and learning resources

The Medical Biology study programme is mainly implemented in quite high number of facilities: Faculty of Medicine's, Vilnius University; Vilnius University Hospital Santariškių Clinics, Institutes of Oncology and Biochemistry of Vilnius University, the National Centre of Pathology (at the Vilnius University Hospital Santariškių Clinics). The list of the premises for the implementation of the study programme includes 15 auditoria and seminar rooms. Practical training is coordinately taking place in the Centre of Laboratory Medicine, Centre of Medical Genetics of Vilnius University Hospital Santariškių Clinics. All these premises and the arrangements between the Faculty of Medicine and the institutions that take part in the implementation of the programme ensure the adequate provision of the study programme. The majority of auditoria and rooms have multimedia equipment, computers and wireless internet accessibility. Up-to-date laboratory equipment (microscopes, HPLC; UPLC; DNA analysis instrumentation etc) for the most practical training (SER p.21) comply with all requirements for the provision of the Study Programme. Although there are listed study subjects related immunology, there is no special description of the equipment and resources required for this training.

The main library for learning resources is the library of Faculty of Medicine. The libraries are equipped with the electronic search systems, familiar to the students and academic staff. Library has over 60 000 publications with new publications acquired every year. The online access to scientific journals and databases is ensured. Dormitories have reading rooms, and every room has internet access.

5. Study process and student assessment

The adequate rules for the admission of the students are enacted by the Lithuanian Higher Education Institutions Association, and they are publicly announced on the VU site. Eligibility to enter the MSc programme is regulated by the requirement of demonstrated completion of mandatory basic courses at the BSc level, and basic relevant educational background in the field. The numbers of state-funded positions for the students are low and variable (2008-2012: annually 4-12 students; Table 9, SER)

The detailed information about the aims and objectives of a subject studied is provided in the Study programme plan published at the website of the VU Faculty of Medicine. The programme is focused on integration of theoretical and practical education in biomedicine. The schedule of classes and exercises is publicly available. The examinations are scheduled in advance and publicly announced via University web-site. Students are encouraged to participate in research projects in the framework of the MSc thesis.

The principles of assessment of students' performance are set out by VU Study Provisions, VU Procedure for the assessment of study results, resolutions of the Council of VU Faculty of Medicine and are described in the course description of each subject. Students are informed directly about the results of the assessment of their study results and they may find them out in the information system of VU. Various methods and tools for the assessment for the evaluation of achievements are employed: observational learning, discussion of cases, observation of direct application of skills, participation in seminars, written colloquium and examination. The requirements for the preparation of final MSc theses and assessment policy are approved by the Council of VU FM and are published on the respective website. The student dropout rates are very low (3 in total over 5 years) indicative to the dedication and motivation of the students, who have chosen this MSc study programme. The research activities should be more structured towards promoting research and the coordinated evaluation (for example at the end of every semester) should be developed. The theses are structured according to scientifically acknowledged general rules, contemporary and use the novel literature. The topics of the master theses offered to students should be more driven by hypothesis and problem based approach, not by analyzing routinely provided biomedical data. Faculty use new and modern equipment necessary for the sophisticated laboratory examination, but not all of the newest equipment is available for the students.

Outgoing and incoming student mobility via Erasmus Programme is developing and is supported by the VU International Relations Office. The mobility is directed mainly toward the EU Universities, while the incoming students came from both non-EU and EU countries. The Study Programme should put the effort to establish and provide its courses in English, thus attempting to increase the incoming mobility. The first step could be organizing more lectures from the teachers from abroad via the existing e-learning equipment.

Student scholarship and support granting is regulated by the university legislature. Students can be granted *state loans* (from state funds) and *state supported loans* (from credit institution funds). Generally, there are three types of additional scholarships available. Students may be granted social scholarships, scholarships for academic achievements or a one-time scholarship for academic achievements. The student support is organized well. The information about the studies are provided to the newly accepted students very efficiently, by the Student Representative bodies, Administrative Office of the Faculty and the Medicine Programme Committee and also on the University and Faculty and Students Representations web-sites. Direct contacts with teachers for the information on specific subjects are also organized. Moreover, there is Study Communication and Information Centre of the University which

constantly provides both individual and group consultations, organises seminars, presentations, provides information via telephone, e-mails, informational publications, the Internet.

Graduates of the MSc study programme have been employed by hospitals clinics (private and public), research institutes, academic institutions. Vilnius University Career Centre helps students solve career problems, independently make career-related decisions and successfully realise themselves in a chosen career field.

6. Programme management

The overall responsibilities for the study programme administration and the quality assurance is well placed, and the procedures are precise. The main element in the management of the study programme is the Study Committee of the Medical Biology MSc study programme of VU FM, which is accountable to the Faculty Council. The Study Committee meets once per semester and coordinates with Vice-Dean of the Faculty and student representatives. It analyzes the information on the progress of the programme and suggest the improvements and changes; also the Committee discuss and incorporate suggestions given by, students, alumni, The Lithuanian Society of Laboratory Medicine, the main Lithuanian society in the field. The process of the study programme administration and quality assurance is laid down in the VU Study Regulation. The main stakeholder in quality assessment is the VU Quality Management Centre. The University implements various procedures for determination of the inner study quality: student result assessment programme, teacher pedagogical qualification development system, and the quite elaborate system of the quality promotion. Students are participating in the process of quality assurance via their representatives at VU Senate and the Rector's Office, Faculty Council and Commissions. However, it has to be stressed that more diverse and effective internal quality procedures and mechanisms that include the impact of students' evaluation should be instituted in this study programme. No one of the students during the meeting with the evaluation team have any knowledge about the SER. The students appeared not much involved in the process to improve the study programme and guarantee their best education in the field, competitive for PhD studies home or abroad. Additionally, the mobility of the students is not stimulated enough, there are no visible efforts by the management to increase mobility.

Importantly, it should be noted that several of the critical recommendations from the previous external evaluation in 2005 had not been implemented by the management team of this MSc-level study programme. An important issue concerning the overall management of the programme, and highlighted during the previous evaluation is limited academic research orientation in the training (experts in 2005 "*... program goals and objectives have to reveal*

more clearly the core of the master's program purpose - to prepare students for the independent research work that requires a deeper knowledge and skills..."). In 2013, the running programme still corresponded more to the training of specialists with certain fixed practical skills. During the site-visit (Nov 7th, 2013), students expressed low interest in scientific research, and some of the representatives of the programme's alumni expressed clearly that the knowledge and research training provided in the programme is inadequate in order to proceed with academic career in the field, e.g. to enter the PhD programmes. There was no sufficient evidence that the students were exposed to international research community in the field through participation in international courses, workshops or conferences. This weakness of the programme and its management is also represented in statistics as annually only single or a few graduates choose to enter doctoral studies. Also, alumni representatives from private sector highlighted the insufficient training in independent practical skills. Overall, more motivation towards academic research and tasks requiring critical thinking has to be provided by the management committee of the programme.

Following circulation of the final report, VU provided their explanations to SKVC regarding critical comments in the report due to programme management. However, in experts' view programme representatives themselves worded an important limitation in their explanations: <...>"*Students participate in different research projects **together with their teachers***"<...>. This is exactly the problematic issue in this programme - lack of students' **independent**, problem-based research requiring critical thinking.

The second critical, but ignored recommendation concerns diversifying the list of the optional courses (experts in 2005: "*There is a need to give graduate students an opportunity to study the proposed alternative elective free elective subjects*"; further discussed in p.7 of this report). Today, no elective courses are offered to the students of this MSc-programme. During the site-visit (Nov 7th, 2013), some teachers expressed their opinion that no elective courses are required. This is the task of the management committee to broaden the scope of the teaching staff towards understanding what is beneficial for the high-quality training of students in the field in general. Thirdly, ignoring the recommendations from 2005 concerning certain study subjects (*to add to the list the following subjects: "Biometrics", "Professional foreign language"*) has led to the situation that during the site-visit (Nov 7th, 2013) it appeared that there is a large group of students who are unable to communicate in English, which is today's language of international science. The external reviewers in 2013 also agreed with evaluation team in 2005 that the programme would benefit from more extensive training in bioinformatics and biostatistics.

An essential weakness of the management of the study programme is that no reliable estimates of the need of medical biologists in Lithuania have been reached, despite the programme has been running > 10 years, and there is no targeted activity to follow-up the career

path of the graduates. The program management should institute the comprehensive database for tracking the alumni and use the network for the future opportunities in the career. Also advertising and promoting the programme in order to improve the students' interest for the programme should be undertaken. The management of the university should be more actively informed about the financial issues related to the relatively small number of entrants (4-12 annually) that influence the programme. The alternative option might be organizing course admittance every second year. The programme should be also more interactive for the people interested in Life Long Learning and returning to higher education.

The Study Programme management uses the facilities and the time efficiently. Career Center provides information about local and international exchange programmes and also about financing, but should also be active in career counselling and pursuing alumni records.

III. RECOMMENDATIONS

1. In order to be consistent with the initial aims of the programme, with the recommendations from previous evaluation and with the MSc-level educational qualification standards, more emphasis has to be put on the wider scope of teaching and high-quality, international level research training in the field.
2. More motivation towards academic independent research of the students, team-work and critical thinking has to be promoted. The research competences and wider general knowledge in the field should reach to the level to be competitive for the admittance to PhD programme.
3. The learning outcomes should be further expanded towards the laboratory management skills, in order to train professionals who are able to manage modern and up –to- dated pathological and molecular laboratory.
4. Obligatory courses in professional foreign language to all students to ensure the possibility of scientific work, and bridging courses in English for those, who need, have to be included into the curriculum.
5. The portfolio of the optional courses already organized at the university should serve to diversify existing courses and guarantee the wider education of the students.
6. The programme would benefit from more extensive training in bioinformatics, biostatistics and laboratory safety protocols course. A special course in Bioethics should be provided, including professional teachers in Ethics. The overall current content of the curriculum would

benefit from the critical reduction of redundancies among present courses, in favour of the additionally recommended courses.

7. The topics of the master theses offered to students should be more driven by hypothesis and problem based approach, not by analyzing routinely provided biomedical data. MSc thesis research in private laboratories and companies should be encouraged.

8. The mobility of teachers and students, and exposure to international community must be strongly promoted, and mechanisms for mobility promotion should be instituted.

9. The profile of the teaching staff should be improved according to the demands of the international knowledge in this field. Lecturers could be gained from younger generation specialists from Lithuania or as guest lecturers from abroad. Up to date literature and classical standard books for all courses should be included into the list of main educational literature.

10. Teachers should have more autonomy in creation of their courses. A sufficient attention to the education of the future academic staff to join or replace the teachers teaching staff must be paid.

11. The study programme committee should institute the comprehensive database for tracking the alumni and use the network for the future opportunities in the career. Career Center should also be active in career counselling and pursuing alumni records

12. The management of the university must be more actively informed about the financial issues influencing the programme. The alternative option is to organize course admittance every second year.

13. More emphasis has to be paid to advertizing and promoting the programme both to students as well as to policymakers and stakeholders in order to improve the number of enrolled students.

14. Diverse and effective internal quality procedures and mechanisms that include the impact of students' evaluation should be instituted.

III. SUMMARY

Generally, the aim of the programme and the learning outcomes are well defined, adequate to the level 7 LTQF and comprising all cognitive categories that are needed. However the aim of the study programme should be wider in regard to theoretical and general knowledge in all study subjects. Current learning outcomes have a bias to be orientated towards training in technical aspects. The team-work is not adequately promoted. The exchange of experiences on the interim

seminars among students, as well as involving teachers and laboratories supervising MSc theses should be useful.

Some of the previous recommendations from the 2005 valuations were not implemented or the measures taken so far haven't been quite adequate, for example: (i) *'program goals and objectives have to reveal more clearly the core of the master's program purpose - to prepare students for the independent research work that requires a deeper knowledge and skills'*, (ii) *'to add to the list the following subjects: "Biometrics", "Professional foreign language" '*. Currently, the English language proficiency is not sufficient enough to ensure the possibility of solid scientific work among the students and support from the university could be provided. The portfolio of the optional courses already organized at the university should serve to diversify existing courses and respect the previous recommendation in 2005 (cite: *There is a need to give graduate students an opportunity to study the proposed alternative elective free elective subjects'*).

The content of the MSc studies programme in Medical Biology corresponds to the qualification requirements set out in European and National Qualification Framework and orders of the Ministry of Education and Science, and the Minister of Health of the Republic of Lithuania. The scope of the programme is 120 ECTS with 30 ECTS distributed evenly through the each semester of the studies. The learning outcomes and competences of the study programme (Table 2, pp.8-10 of SER) are provided in detail and precisely, they are well defined and, in general, consistent with the requirements of MSc level studies in biomedicine. The learning outcomes are not strictly related to practical skills performed in the modern pathological laboratories, as for example diagnostic immunohistochemistry. Those learning outcomes should be further expanded and also related to the laboratory management, in order to train professionals who are able to manage modern and up –to- dated pathological and molecular laboratory. The learning outcomes related to Anatomic Pathology are not precisely oriented to research nor to management of quality control of procedures provided in a modern pathology laboratory.

All the teachers are active researches regularly participating in the scientific conferences. The staff demonstrates active research and reasonable number of publications in the leading national and/or international journals in last five years. A significant number of them participated in national and international projects and societies. However, a sufficient attention to the education of the future academic staff to join or replace the teachers teaching staff must be paid. The mobility of teachers and students should be further promoted, and mechanisms for mobility promotion should be instituted. Also visiting lectures should be engaged.

The wide range practical skills are provided within the curriculum, but more motivation and critical thinking in science should be provided within the study programme. The research competences and wider general knowledge in the field should reach to the level to be competitive for the admittance to PhD programme. The programme would benefit from more extensive training in bioinformatics, biostatistics and laboratory safety protocols course.

The research activities should be more organized towards promoting creative, hypothesis and problem based research and the coordinated evaluation should be developed. The theses are structured according to scientifically acknowledged general rules, contemporary and use the novel literature. Faculty use new and modern equipment necessary for the sophisticated laboratory examination, but not all of the newest equipment is available for the students.

The program management should institute the comprehensive database for tracking the alumni and use the network for the future opportunities in the career. Advertising and promoting the programme to increase the admission rates, and financing resources available for the programme should be undertaken. The management of the university must be more actively informed about the financial issues influencing the programme. The alternative option is to organize course admittance every second year. The programme must be more interactive for the people interested in Life Long Learning and returning to higher educations. More diverse and effective internal quality procedures and mechanisms that include the impact of students' evaluation should be instituted. No one of the students didn't see or read the SER. The Study Programme management uses the facilities and the time efficiently. Career Center provides information about local and international exchange programmes and also about financing, but should also be active in career counselling and pursuing alumni records.

V. GENERAL ASSESSMENT

The study programme *Medical biology* (state code – 621B91001) at Vilnius University is given positive evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	4
4.	Material resources	4
5.	Study process and assessment (student admission, study process student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	2
	Total:	19

*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.

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Prof. dr. Maris Laan

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<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus universiteto studijų programa *Medicinos biologija* (valstybinis kodas – 621B91001) vertinama teigiamai.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	4
4.	Materialieji ištekliai	4
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	2
	Iš viso:	19

* 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

Apskritai, programos tikslais ir studijų rezultatai yra tinkamai apibrėžti, pakankami 7 LTQF lygiui, ir apima visas reikalingas pažintinės veiklos kategorijas. Vis dėlto, studijų programos tikslai turėtų užtikrinti platesnes teorines ir bendro pobūdžio žinias pagal visus dėstomus dalykus. Studijų rezultatai, kaip jie yra šiuo metu apibrėžti, yra labiau orientuoti į techninių aspektų mokymą. Nepakankamai skatinamas komandinis darbas. Naudinga būtų skatinti studentų nuomonių mainus tarpiniuose seminaruose, į kuriuos galėtų būti kviečiami magistro darbams vadovaujantys dėstytojai ir laboratorijų darbuotojai.

Kai kurios po 2005 m. vykdyto programos vertinimo rekomenduotos priemonės nebuvo įgyvendintos, arba iki šiol įgyvendintos priemonės tikrai nebuvo pakankamos, pavyzdžiui: i) „programos tikslai ir siekiniai turėtų aiškiau atskleisti šios magistro programos tikslą – parengti

studentus savarankiškai vykdyti mokslinį tiriamąjį darbą, kuris reikalauja gilesnių žinių ir įgūdžių“, ii) „studijų programą papildyti naujais kursais, tokiais kaip „Biometrika“ ir „Profesinė užsienio kalba“.

Šiuo metu studentų turimos anglų kalbos žinios nėra pakankamos rimtam moksliniam darbui vykdyti ir Universitetas turėtų imtis priemonių padėti studentams šią spragą pašalinti. Universiteto siūlomas pasirenkamųjų dalykų portfelis turėtų pajavairinti jau dėstomus dalykus, kaip jau buvo nurodyta po 2005 m. programos vertinimo pateiktose rekomendacijose (cituojuame: *Būtina suteikti studentams galimybę studijuoti siūlomus alternatyvius laisvai pasirenkamus dalykus*).

Medicinos biologijos magistro studijų programos turinys atitinka Europos ir nacionalinėse kvalifikacijų sąrangose apibrėžtus kvalifikacijos reikalavimus, taip pat Lietuvos Respublikos Švietimo ir mokslo ministro ir Sveikatos ministro įsakymus. Visa programos apimtis yra 120 ECTS, tolygiai paskirstant po 30 ECTS kiekvienam studijų semestriui. Programos studijų rezultatai ir kompetencijos (2 lentelė, SS 8-10 p.) yra išdėstyti išsamiai ir tiksliai, tinkamai apibrėžti ir apskritai, atitinka magistro lygio biomedicinos studijų programai keliamus reikalavimus. Studijų rezultatai nėra pakankamai tiesiogiai susieti su praktiniais įgūdžiais, kokie yra reikalingi šiuolaikinėse patologijos laboratorijose, pavyzdžiui, diagnostinė imunohistochemija. Šie studijų rezultatai turėtų būti praplėsti, numatant reikalavimą ugdyti vadovavimo laboratorijai įgūdžius, taip, kad programa paruoštų profesionalus, gebančius vadovauti moderniai ir šiuolaikiškai įrengtai patologijos ir molekulinei laboratorijai. Anatomicinės patologijos kurso studijų rezultatai nėra pakankamai orientuoti suteikti studentams mokslinio tiriamojo darbo įgūdžių, ar supažindinti su modernioje patologijos laboratorijoje taikomomis kokybės kontrolės valdymo procedūromis.

Visi dėstytojai yra aktyvūs mokslininkai ir reguliariai dalyvauja mokslinėse konferencijose. Pedagoginio personalo nariai aktyviai dalyvauja mokslinėje tiriamojoje veikloje, per pastaruosius penkis metus yra paskelbę nemažai publikacijų svarbiausiose nacionaliniuose ir (arba) tarptautiniuose žurnaluose. Daug pedagoginio personalo atstovų dalyvauja nacionaliniuose ir tarptautiniuose projektuose ir bendrijose. Būtina skirti pakankamą dėmesį būsimam akademinio personalo rengimui, kuris ateityje prisijungs prie esamo pedagoginio personalo, arba pakeis dabartinius dėstytojus. Būtina skatinti dėstytojų ir studentų judumą, kaip ir jų platesnį ir aktyvesnį bendradarbiavimą su tarptautine bendruomene, bei diegti judumo skatinimo mechanizmus. Taip pat būtina aktyviau kviesti paskaitas skaityti dėstytojus iš kitų aukštųjų mokyklų.

Programos sandara apima įvairių praktinių įgūdžių ugdymą, vis dėlto, ši studijų programa turėtų daugiau dėmesio skirti studentų motyvavimui ir kritiškam moksliniam

mąstymui. Programa turėtų suteikti mokslinio tiriamojo darbo kompetencijas ir platesnės bendro pobūdžio atitinkamos srities žinias, kurios užtikrintų studentų konkurencingumą priėmimui į doktorantūros programą. Būtų labai naudinga į programą įtraukti išplėstinius bioinformatikos, biostatistikos ir laboratorijos saugos taisyklių kursus.

Vykdoma mokslinė tiriamoji veikla turėtų būti organizuota taip, kad skatintų kūrybišką, hipotezėmis grindžiamą ir probleminį mąstymą, taip pat turi būti sukurta koordinuota vertinimo sistema. Studentų baigiamieji darbai rengiami vadovaujantis bendromis moksliskai pripažintomis taisyklėmis, jie yra aktualūs ir rašomi remiantis pačia naujausia literatūra. Fakultete yra nauja šiuolaikinė įranga, reikalinga atlikti sudėtingus laboratorinius tyrimus, tačiau ne visa pačia naujausia įranga yra leidžiama naudotis studentams.

Studijų programos komitetas turėtų sukurti išsamią duomenų bazę, kuri leistų stebėti programos absolventų darbinę karjerą, ir naudotis tokiu tinklu vertinant ateities karjeros galimybes. Būtina aktyviau vykdyti programos pristatymą, ją populiarinti, siekiant padidinti stojančių studentų skaičių, ir pritraukti jai reikalingą finansavimą. Universiteto vadovybė turėtų būti aktyviau informuojama apie programai įtaką darančius finansinius klausimus. Alternatyvus sprendimas būtų rengti studentų priėmimą į programą kas antrus metus. Programa turėtų aktyviau bendrauti su mokymosi visą gyvenimą programa besidominčiais ir norinčiais grįžti į aukštąjį mokslą asmenimis. Būtina sukurti ir įdiegti įvairias ir veiksmingas vidaus kokybės užtikrinimo procedūras ir mechanizmus, pagal kuriuos taip pat būtų atsižvelgiama ir į studentų vertinimus. Nė vienas studentas nematė ir neskaitė Savianalizės suvestinės. Studijų programos komitetas veiksmingai išnaudoja jam suteiktus išteklius ir laiką. Karjeros centras teikia informaciją apie vietos ir tarptautines mainų programas, finansavimo galimybes, tačiau turėtų taip pat aktyviai konsultuoti karjeros klausimais ir vykdyti programos absolventų karjeros stebėseną.

III. REKOMENDACIJOS

1. Siekiant atitiktis pradiniais programos tikslams, taip pat tinkamai įgyvendinti ankstesnio vertinimo metu pateiktas rekomendacijas, bei užtikrinti atitiktį magistro studijų lygio kvalifikacijos standartams, didesnis dėmesys turėtų būti skiriamas mokymo apimties didinimui, bei aukštos kokybės tarptautinio lygmens mokslinių tyrimų pagrindu organizuojamam mokymui atitinkamoje srityje.

2. Studentus būtina skatinti aktyviau vykdyti savarankiškus mokslinius tyrimus, mokyti dirbti komandoje ir kritiškai mąstyti. Mokslinio tiriamojo darbo kompetencijos ir platesnės bendro

pobūdžio atitinkamos srities žinios turi būti pakankamai konkurencingos priėmimui į doktorantūros programą.

3. Studijų rezultatai turėtų būti praplėsti, įtraukiant reikalavimą ugdyti vadovavimo laboratorijai įgūdžius, kad programa paruoštų profesionalus, gebančius vadovauti moderniai ir šiuolaikiškai įrengtai patologijos ir molekulinei laboratorijai.

4. Į programą būtina įtraukti visiems studentams privalomą profesinės užsienio kalbos kursą, kuris užtikrintų jiems galimybę vykdyti mokslinį darbą, bei išlyginamąjį anglų kalbos kursą tiems, kuriems toks reikalingas.

5. Universiteto siūlomas pasirenkamųjų dalykų portfelis turėtų pajvairinti jau dėstomus dalykus ir garantuoti platesnį studentų išsilavinimą.

6. Būtų labai naudinga į programą įtraukti išplėstinius bioinformatikos, biostatistikos ir laboratorijos saugos taisyklių kursus. Turėtų būti numatytas specialus bioetikos kursas, kurį dėstyti turėtų profesionalūs etikos dėstytojai. Bendras programos turinys taptų veiksmingesnis, pašalinus kai kuriuos dabartinių studijų dalykų persidengimus, vietoj jų įtraukiant naujus rekomenduojamus kursus.

7. Studentams siūlomos magistro baigiamųjų darbų temos turėtų skatinti studentų hipotezėmis grindžiamą ir probleminį mąstymą, o ne tik apsiriboti tradicine turimų biomedicinos duomenų analize. Rašydami savo magistro baigiamuosius darbus studentai turėtų būti skatinami vykdyti mokslinius tyrimus privačiose laboratorijose ir įmonėse.

8. Būtina skatinti dėstytojų ir studentų judumą, kaip ir jų platesnį ir aktyvesnį bendradarbiavimą su tarptautine bendruomene, bei diegti judumo skatinimo mechanizmus.

9. Pedagoginis personalas turėtų kelti savo kvalifikaciją atsižvelgiant į atitinkamos srities tarptautinio lygmens žinių poreikį. Lektorių būtų galima pritraukti kviečiant jaunesnės kartos Lietuvos specialistus, bei lektorius iš užsienio. Į pagrindinį visų kursų mokomosios literatūros sąrašą būtina įtraukti naujausius atitinkamos srities leidinius ir klasikinius veikalus.

10. Dėstytojai turėtų turėti daugiau laisvės savarankiškai kurti jų dėstomus kursus. Būtina skirti pakankamą dėmesį būsimo akademinio personalo rengimui, kuris ateityje prisijungs prie esamo pedagoginio personalo, arba pakeis dabartinius dėstytojus.

11. Studijų programos komitetas turėtų sukurti išsamią duomenų bazę, kuri leistų stebėti programos absolventų darbinę karjerą, ir naudotis tokiu tinklu vertinant ateities karjeros

galimybes. Karjeros centras turėtų aktyviau teikti konsultacijas karjeros klausimais ir sekti programos absolventų profesinius pasiekimus.

12. Universiteto vadovybė turėtų būti aktyviau informuojama apie programai įtaką darančius finansinius klausimus. Alternatyvus sprendimas būtų rengti studentų priėmimą į programą kas antrus metus.

13. Norint padidinti į programą stojančių studentų skaičių būtina daugiau dėmesio skirti programos reklamai ir pristatymui tiek studentams, tiek politikos formuotojams, bei kitoms suinteresuotoms šalims.

14. Būtina sukurti ir įdiegti įvairias ir veiksmingas vidaus kokybės užtikrinimo procedūras ir mechanizmus, pagal kuriuos taip pat būtų atsižvelgiama ir į studentų vertinimus.

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