STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vytauto Didžiojo universiteto

STUDIJŲ PROGRAMOS *BIOCHEMINĖ ANALIZĖ* (*621C77001*)

VERTINIMO IŠVADOS

EVALUATION REPORT

OF *BIOCHEMICAL ANALYSIS* (*621C77001*)

STUDY PROGRAMME

at Vytautas Magnus University

Grupės vadovas: Team leader:	Prof. dr. Laurent Counillon
Grupės nariai: Team members:	Prof. dr. Trine Meza Johansen
	Prof. dr. Christoph Griesbeck
	Julius Gagilas
	Benas Gabrielis Urbonavičius

Išvados parengtos anglų kalba
Report language - English

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2014

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Biocheminė analizė***
Valstybinis kodas	621C77001
Studijų sritis	Biomedicinos mokslai
Studijų kryptis	Molekulinė biologija, biofizika ir biochemija
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	Taikomosios biochemijos magistras
Studijų programos įregistravimo data	2009-08-17 įsakymo nr. 1-73

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Biochemical analysis***
State code	621C77001
Study area	Biomedical Sciences
Study field	Molecular biology, biophysics and biochemistry
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 Applied Biochemistry
Date of registration of the study programme	17-08-2009, order no. 1-73

CONTENTS

I. INTRODUCTION

Vytautas Magnus University (hereinafter VMU) is a rather young institution celebrating its 25th anniversary in 2014. Currently 10 faculties are active at VMU (Faculty of Humanities, Faculty of Economics and Management, Faculty of Informatics, Faculty of Natural Sciences, Faculty of Social Sciences, Faculty of Theology, Faculty of Arts, Faculty of Social Sciences, Faculty of Political Science and Diplomacy, Faculty of Law, VMU Music Academy), containing 41 departments, 2 institutes, 22 study and research centers.

The Biochemical Analysis Master degree Study Programme at VMU is designed for the training of specialists who can successfully work in education, science, technology, business and social areas or systems for applications of biochemistry in the development of technologies and tools for the Knowledge society, in the biotechnological production process control, as well as in searching for optimal solutions in various fields of molecular biosciences. The idea is that there will be an increasing demand for the specialists the programme is preparing in the fields of biochemistry, chemistry and molecular biology.

Historically, the respective study programme has evolved from a Master study programme in chemistry. It is organized by the department of biochemistry and biotechnologies at the faculty of Natural Sciences at VMU. It is however important to notice that this programme is largely oriented towards analytical methods in biochemistry, which have a large part within chemical and physical methods of analysis (separation methods, bioenergetics, spectral analysis for example).

There is a very interesting and unique offer at VMU for graduates of professional bachelor programmes. They can prepare for entering a master study programme such as biochemical analysis by taking a special preparation course.

The international expert team for evaluation of this master degree programme consisted of:

- Prof. dr. Laurent Counillon (group leader) – University of Nice, France;
- Prof. dr. Christoph Griesbeck, Head of Department and Study Programs Biotechnology – MCI – Management Center Innsbruck, Austria;
- Prof. dr. Meza Trine Johansen – Assistant Deputy Director General, Department of Quality Assurance NOKUT, Norway;
- Julius Gagilas, Director of company “Diagnolita”, Lithuania;
- Benas Gabrielis Urbonavičius, Student representative, Kaunas University of Technology, Lithuania.

This evaluation report prepared by the expert team is based on the analysis of Self-Evaluation Report including Annexes and site visit on 19th of March 2014. During the visit, the committee met: the administration staff, the self-evaluation report writing team, the teachers, the students, alumni and social partners.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

According to the self-evaluation report (SER, page 7, paragraph 21), the learning outcomes of the programme have been defined by taking into account the corresponding international and local directives and documents, are stated to be on level 6 according to the Lithuanian Qualification framework (LTQF). The experts' group does not agree upon this statement, due to several facts. Firstly, the correct level in the LTQF is 7 and not 6 as stated in the SER. Secondly, the intended learning outcomes as written in the SER do not match usual standards of learning outcomes. They are expressed more in the form of course contents, for example the learning outcome A1 knowledge given on page 7 of the SER: "*Knowledge of Chemistry: terminology, conventions and units; modern understanding of chemical bonding and structure of matter, methods of analysis and instruments, the basics of chemical thermodynamics and kinetics; reaction mechanisms, stereochemistry, structure and properties of natural compounds; good laboratory practice, introduction to internal and external laboratory quality control; laboratory design; modeling in chemistry and biology, emphasizing basic principles, practical use and future perspectives.*" A learning outcome should be formulated on the basis of what a person knows, what a person can do and is capable of doing as a result of a learning process, and in the example above, this is not the case. Therefore, the learning outcomes of the study programme has to be rewritten, this is needed in order to clarify the aims of the study programme. When rewriting the learning outcomes for the programme, it is important that the university uses the LTQF in order to assure that the learning outcomes formulated are on the correct level. The self-evaluation report states that the learning outcomes of the programme are assessed every two years according to the "VMU Teaching Quality Assessment Policy" by The Study Programme Committee, consisting of Programme teachers, social partners, students and alumni (SER, page 10). During the site visit, however, the interview with the self-evaluation group it was stated that the learning outcomes have been written recently only for the SER but did not represent the basis of the study concept and curriculum. Moreover, only one person was involved in writing the learning outcomes as the visiting evaluation team has been informed. The evaluation committee thereby strongly recommends that the teachers and stakeholders are more involved in formulating the learning outcomes of the programme when these are rewritten.

The field of biochemical analysis, biochemistry and biotechnology has a tradition in Lithuania and is visible in the Lithuanian biotechnological and pharmaceutical industry. There is certainly a strong demand after specialists trained in the field of biochemical analysis. However, it could not be clarified whether the graduates´ profile meets the demand of the relevant companies. The evaluation team did not find indications that possible employers have been involved systematically in the redesigning process of the study programme. During the meeting with social partners, a representative of a large biotechnological company stated that the company has started a collaboration with the university on the respective programme very recently, but he did not have extensive information on the content and outcome nor has he been involved in the programme development.

With respect to a study programme named "Biochemical analysis" some topics in the analysis of biochemically relevant macromolecules such as DNA, proteins or carbohydrates do not appear to be sufficiently represented. E.g. analysis of protein modifications such as glycosylation is not mentioned, knowledge about methods such as mass spectrometry and gas chromatography are not as central as they could be in programme of this name. For graduates working in the biopharmaceutical industry such knowledge would be crucial. The current orientation may reflect the origin based on a chemistry programme.

As learning outcomes are ill formulated, their consistency to the type and the level of studies can only be indirectly assessed by evaluating the subjects given as part of the programme. In general, the topics offered in this programme are consistent with the usual type and level of master programmes. In comparison to topics of the bachelor level there is an advanced approach in the subjects offered in this programme.

2. Curriculum design

The curriculum appears to meet the legal requirements (normative documents of the Lithuanian Republic, the Ministry of Education and Science, VMU normative documents). The duration of the programme is 2 years (4 semesters), and the total volume is 120 ECTS. It contains mandatory subjects, one elective each for the 2nd and 3rd semester, one term paper and two research works. The 4th semester is dedicated to the master thesis. The balance between those courses is correct for Master level as it offers some flexibility of choice which is important for the Master students. Although students can choose research works and the thesis in different research groups, most of them apparently spend the entire research time within the same group. As a suggestion, the obligation to do these research works and thesis in different laboratories could increase the students´ methodical background and broaden their knowledge in different fields.

This programme consists of mandatory and elective courses with a strong anchor in chemical and physical analysis for biological molecules and biological systems. Based on this, the programme is self-coherent and not repetitive.

Although the programme is self-consistent and contains sufficient knowledge to ensure a good level, its scope might be broadened by putting a stronger emphasis on some state-of-the-art methods based on molecular biology and on immunological techniques that are now high throughput techniques and find a growing place in biochemical analysis, especially in industry. Also detailed methods in DNA and protein analysis seem to be taught in a too limited amount. E.g. modern methods in DNA sequencing should be reflected in such a study programme. The highly relevant topic of protein analysis with respect to protein modifications such as glycosylation or phosphorylation is also not sufficiently reflected within this programme, although such methods are important for the analysis of biopharmaceuticals. Employers in the biopharmaceutical industry would expect graduates of a biochemical analysis programme to be experienced in all of the state of the art protein analysis methods, because they are needed for studies about biocompatibility and half-life of protein drugs.

Some non-scientific topics and personal skills (e.g. project management, legal basis, business administration, quality assurance, good laboratory practice or intellectual property rights) which could be very helpful for the graduates are also missing within this programme, as particularly master graduates usually can come into responsible positions soon after graduation and would appreciate knowledge in these fields. These competencies are meanwhile subjects in a large number of master study programmes and are highly appreciated by graduates and employers.

3. Staff

The staff responsible for the development of the study programme and the teaching appears to be experienced in both research and teaching. According to annex 2 the teaching staff of the programme is involved in research directly related to the study programme. The qualification of the academic staff corresponds to the requirements set in the “Description of general

requirements for the master study programmes": 38.1% of the Programme study subjects are taught by professors, 38.1% - by docents, 23.8% - by lecturers. Therefore, the legal requirement is clearly fulfilled. ("No less than 20% of major study field subjects' volume has to be taught by teachers holding a Professors academic degree."). Annex 3 gives the detailed CVs and recent publications of the teaching staff. Although the ratio of publications within Lithuanian journals compared to international ones is quite high, this is adequate to ensure the learning outcome, both in term of qualification, research interest and recent publication activity. However, involvement in national and international projects has some space for improvement, as the SER mentions 12 international and 20 national projects for the programme teachers. A stronger collaboration with other research institution could be helpful in order to join resources.

In total, 21 teachers are affiliated with the Programme; 81% are full-time teachers, and guest scientists can be invited to teach specialized subjects if required. Although it is noted in the SER that some specific subjects are taught by external experts, it would be noteworthy if there is a special process for the selection of guest speakers. During the visit a systematic process for involvement of guest speakers could not been seen.

Significant mobility is reported each year for members of the teaching staff, indicating that the turnover is sufficient. According to the discussion with the teaching staff there is a strong involvement in international teaching exchange activities which is very beneficial for the study programme. Young scientist can take online courses or go abroad to improve their teaching abilities. In general, the teaching staff puts strong efforts in teaching and is very dedicated to their subjects. Processes for the development and maintenance of the teaching skills are omitted in the report, which was consistent with the interviews during the visit. This part of the professional development of the staffs should be ensured by adequate processes and evaluations.

The teacher-student ratio, i.e. the group size for the lectures of the Programme, is said to be 15–25 students for essential and special study subjects. For the seminars and laboratory works the group size is 10–12 students. There seems to be enough teaching staff to allow turnover, the document reports one maternity leave. The programme is also supported by three technicians and engineer, taking care of the teaching and research laboratories. This seems to be adequate to ensure the learning outcomes.

4. Facilities and learning resources

The Faculty of Natural Sciences shares the building (hereinafter FNS building) with the Faculty of Informatics at Vileikos st. 8. Students of the Biochemical analysis Programme mostly use FNS building resources, but other VMU resources are also used upon need. The SER documents provide a detailed list of the facilities and learning resources, which seem quite adequate. A very detailed description of the rooms, materials and software for the students practice is given in the self-evaluation rport (pages15-17). Specific equipment necessary for realizing the practical parts of the Biochemical analysis study programme is listed in the SER in detail. These laboratories and equipment were visited on site. The equipment is consistent with subjects of the curriculum. Equipment for other integral methods within the field of Biochemical analysis such as mass spectrometry or protein modification analysis (which are not part of the curriculum now) leaves some space for improvement.

There is a well-equipped library including very committed and qualified library staff. Computer rooms for students are available and equipped with an impressive array of the latest computers (although these are not iMac computers as stated in the SER).

Textbooks are cited in the curriculum description. The numbers of the available textbooks are indicated as well. Self-evaluation report indicates that the teaching staff is in close connection with the library staff to ensure that these documents will be available in printed or electronic form for the students. Teachers also pay attention to recommend textbooks that are available in the library. Electronic learning material and approximately 25 licensed online databases (Medline (EBSCO Publishing), Academic Search complete (EBSCO Publishing), ScienceDirect, SpringerLink, Oxford Journals Online, etc.) covering the study subjects of Biochemistry and Biochemical analysis are available to the staff and students.

In general, the facilities and resources appear to be well equipped and adequate in order to ensure all operations within this study programme.

5. Study process and student assessment

As stated within the SER (paragraph 69-73), the process of admission to the study programme is defined and transparent. The admission requirements appear to be founded and described as the space and students funding is limited for such a programme. Applicants to the Master Programme of Biochemical Analysis are required to have a university bachelor degree in Biochemistry, Chemistry, Biology, Molecular biology, Biophysics, Genetics, or a university bachelor degree in related study branches (Biomedicine). They then enter a contest whose rules are quite clear and explicit. The contest is organized by calculating individual contest marks for the participants, using the following formula: $K = 0.3A + 0.6B + 0.1C$, where A is an arithmetic average of all the exam marks in the bachelor diploma supplement; B is the mark average for study direction subjects in the bachelor programme; C is the mark for the Bachelor Thesis (see paragraph 73 of the SER).

However, clear strategies about dealing with the different scientific backgrounds of entrants could not be seen. As graduates from different bachelor programmes as diverse as Chemistry or Molecular Biology can enter the respective Biochemical analysis master programme (according to paragraph 72), there should be some strategies to bring them to comparable levels in subjects that have not been presented equally in different bachelor programmes.

The programme seems to have a large part of lectures compared to a variable part of practical work, which seems to be situated between 15 and 50% depending on the course. This is in principle fine, but as the aims of this master are quite large in terms of job opportunities, a larger part of practical work and if possible opportunities for rotations in research laboratories, companies and industry might add value to this master programme.

Students are encouraged to participate in research as they have to provide one term paper and two research works during semester 1-3, which amounts to 6 ECTS per semester (20 %). During the fourth semester students work on their master theses, which covers the complete semester (30 ECTS). Although students can choose research works and the thesis in different research groups, most of them apparently spend the entire research time within the same group. As a suggestion, the obligation to do these research works and the thesis in different laboratories could increase the students´ methodical background and broaden their knowledge in different fields. Apart from this it is difficult to assess more precisely the practical conditions in which this research programme is conducted. The students have the possibility to present their research works at the annual conference “The Vital Nature Sign” (organized in May or June by VMU, VMU

Academic Youth Scientific Society "Modusas" and international chairpersons) as well as in other conferences and academic events.

This programme is involved in LLP/Erasmus cooperation with foreign universities (cf. paragraph 92). During 2010-2012 four students from the Biochemical analysis study programme used LLP/Erasmus exchange programme for studies and practice in University of Copenhagen (Denmark), University of Helsinki (Finland) and University of Marburg (Germany). However, several students regretfully pointed out that it was not possible for them to go abroad with an Erasmus scholarship for courses because of not sufficiently matching subjects in the partner universities. It would be very fruitful to improve the exchange opportunities for students and to encourage them to make use of it. The programme management could assist in finding matching courses and in accepting them for the exchange.

In paragraph 99 (SER, page…) it is stated: "*Different forms of help for career planning are available for the Programme students. VMU Youth Career Center regularly organizes seminars and provides consultations on career planning issues. The most successful graduate career examples are presented on the Faculty website and bulletin boards. The University and the Faculty have cooperation agreements with different social partners, including commitments to inform about job positions, which could be taken by the Faculty graduates. Announcements for open job positions are placed on the FNS website and bulletin boards. Another form of recruitment, in which the Faculty staff is involved, is individual search for possible job applicants for social partners and other institutions upon their requests.*" On the other hand, students found that the engagement of the university in graduate placement and enabling contacts between students and industry could be expanded. They would appreciate some more organised events to get in contact with companies such as career days or excursions to possible employers. Career perspectives could be stronger reflected during their course of study.

The evaluation and marking of the students are explained in detail, made publicly available and follow strict rules and requirements. Students can access the assessment criteria information for individual study subjects on the University website and Moodle systems. Also, at the beginning of each semester, teachers present the assessment procedure for each study subject, covering the detailed structure of the study subject content, expected learning outcomes, assessment structure, assessment criteria and other requirements (cf. paragraph 106). Considering presented term papers during the visit, the evaluation group had the impression that the evaluation criteria for scientific work such as citations and working with reference lists are not completely defined or are not applied universally by all lecturers.

In the actual version the study programme is quite new, therefore there are only a small number of graduates, and a comprehensive overview of their acceptance cannot be given. As the number of graduates will increase annually, organised processes for graduate surveys could be helpful in order to increase the knowledge about the career perspectives and to improve the quality of the study programme based on the graduates´ experience.

6. Programme management

The study programme committee (hereinafter SPC) is defined in the SER. Prof. habil. dr. R. Daugelavičius, the professor of the Department of Biochemistry and Biotechnologies, is the Chair of the Committee. However, several aspects of the programme management appear to be not organised properly. Some members of the teaching staff felt that their opinions have not been

included in decisions of the SPC. It is interesting that this impression was given several times to the visiting evaluation group. As the responsibilities are distributed to different positions and boards, an organisational chart concerning the responsibilities within the study programme could be helpful to elucidate decision and administrative processes. A coordinator has been named for the study programme Biochemical analysis. Students know about this position, but usually do not get in contact to discuss topics of the programme management and quality of courses. A stronger identification of teaching staff, students, and social partners with the biochemical analysis programme could be achieved by a stronger visibility of the study programme coordinator acting as a linker between the study programme committee and the involved parties as mentioned above.

Social partners although present in the SPC are scarce and turned out to not having been involved in the implementation of the programme. Moreover, industry partners turned out to be not sufficiently informed about the contents and aims of the study programme. Therefore, a stronger involvement of these different groups of stakeholders could be highly beneficial for the quality of the study programme.

Paragraph 124 of the SER describes the VMU Teaching Quality Assessment Policy: *"The VMU Teaching Quality Assessment Policy defines the procedures, methodology and responsibilities for teaching quality monitoring and assurance. This policy is implemented via periodical surveying of students and teachers (special questionnaires and tools for survey analysis are used). 2–3 study subjects are assessed at the end of each semester. Students and teachers provide their evaluation of different aspects of teaching quality, such as using visual tools, keeping contact with the audience, etc. as well as the evaluation of the study subject adequacy to the learning outcomes. The results of the surveys are analyzed at the department level, usually organizing individual discussions with teachers. The results of the surveys are considered to be confidential, oriented towards individual teacher self-reflection and self-development, and are discussed individually by the teacher and the head of the corresponding department."* It becomes clear that a complete evaluation of all courses and lecturers is not provided and that the results are only discussed individually instead of involving different groups of stakeholders. This is consistent with statements during the visit that at most 10 % of the students fill questionnaires. Combining information from the SER and the visit it becomes clear that an extensive revision of the tools for quality management is strongly recommended in order to collect regularly and generally information about the quality of all courses and teachers and to ensure the quality of the study programme(s).

In general, some aspects of management within the respective programme and the faculty could be developed, which became apparent during the visit of the evaluation group. E.g. there were discrepancies between the participants for the interviews listed and the ones that were really present. This was most apparent for the groups of graduates and social partners.

III. RECOMMENDATIONS

1. Rewrite learning outcomes in a proper manner.

2. Revise subjects and include some topics which are important in the field of biochemical analysis (e.g. protein modification).

3. Implement a quality management system and install staff responsible for these items.

4. Enable students to make more use of Erasmus exchange opportunities.

5. Involve social partners stronger in order to ensure a strong graduate placement.

IV. SUMMARY

Main positive aspects:

- The curriculum design of the study programme is self-coherent and non-repetitive.
- Resources in terms of library, internet, computing facilities etc. are in good condition and quite nicely accessible.
- The teaching staff members are strongly involved in the programme and well within the field with a publication activity in good adequacy with the programme.
- The Erasmus teaching staff exchange appears to be established quite well.

Main negative aspects:

- The learning outcomes as written in the SER do not match usual standards of learning outcomes.
- The programme evolved from a chemistry master. Some topics in the analysis of biochemically relevant macromolecules such as DNA, proteins or carbohydrates do not appear to be sufficiently represented. In this respect more space should be devoted towards molecular biology/immunological techniques which are a large part of biochemical analysis today.
- The amount of elective courses is quite low. Therefore the programme is quite tubular. Some elective courses could be proposed in relation with professional skills (e.g. management, quality assurance, good laboratory practice or intellectual property rights)
- Erasmus exchange opportunities for students are limited despite the fact that Erasmus exchanges have been established.
- Involvement of teaching staff members and social partners in the study programme design and development appears to be weak.
- Quality management processes for different topics such as programme development or student assessment need some improvement.

V. GENERAL ASSESSMENT

The study programme Biochemical analysis (state code – 621C77001) at Vytautas Magnus University is given a **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	2
2.	Curriculum design	2
3.	Staff	3
4.	Material resources	3
5.	Study process and assessment (student admission, study process student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	2
	Total:	**15**

*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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Santraukos vertimas iš anglų kalbos

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V. APIBENDRINAMASIS ĮVERTINIMAS

Vytauto Didžiojo universiteto studijų programa *Biocheminė analizė* (valstybinis kodas – 621C77001) vertinama teigiamai.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	2
2.	Programos sandara	2
3.	Personalas	3
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	2
	Iš viso:	**15**

* 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

Pagrindiniai teigiami aspektai:

- Studijų programos sandara yra nuosekli ir nesikartojanti.

- Materialieji ištekliai, įskaitant biblioteką, internetą, kompiuterių patalpas ir pan., yra geros būklės ir pakankamai gerai prieinami.

- Dėstytojai aktyviai dalyvauja studijų programoje ir publikuoja straipsnius srityse, kurios gerai atitinka studijų programą.

- Atrodo, kad dėstytojai gana aktyviai dalyvauja *Erasmus* mainų programoje.

Pagrindiniai neigiami aspektai:

- Savianalizės suvestinėje pateikti studijų rezultatai neatitinka įprastinių studijų rezultatų standartų.

- Studijų programa kilo iš chemijos magistro studijų programos. Tam tikros biocheminiu požiūriu reikšmingų makromolekulių analizės temos, tokios kaip DNR, baltymai arba angliavandeniai, nepakankamai į ją įtraukiamos. Šiuo požiūriu reikėtų skirti daugiau dėmesio molekulinės biologijos ir (arba) imunologijos technikoms, kurios šiandien sudaro didelę biocheminės analizės dalį.

Studijų kokybės vertinimo centras

- Pasirenkamųjų dalykų yra gana mažai. Todėl studijų programa yra gana nelanksti. Reikėtų pasiūlyti pasirenkamųjų dalykų, susijusių su profesiniais įgūdžiais (pavyzdžiui, vadyba, kokybės užtikrinimas, geroji laboratorijų praktika arba intelektinės nuosavybės teisės).

- *Erasmus* mainų galimybės studentams yra ribotos, nepaisant to, kad *Erasmus* mainai vyksta.

- Dėstytojai ir socialiniai partneriai silpnai įtraukiami į studijų programos sudarymo procesą.

- Reikia tobulinti kokybės vadybos procesus įvairiose srityse, tokiose kaip programos gerinimas arba studentų vertinimas.

III. REKOMENDACIJOS

1. Tinkamai perrašyti studijų rezultatus.

2. Peržiūrėti studijų dalykus ir įtraukti temas, kurios yra svarbios biocheminės analizės srityje (pavyzdžiui, baltymų modifikacija).

3. Įdiegti kokybės vadybos sistemą ir paskirti už ją atsakingus darbuotojus.

4. Skatinti studentus labiau išnaudoti *Erasmus* mainų programos teikiamas galimybes.

5. Labiau įtraukti socialinius partnerius, siekiant užtikrinti didesnį absolventų įsidarbinamumą.

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