



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

ŠIAULIŲ UNIVERSITETO
STUDIJŲ PROGRAMOS *EKOLOGIJA IR APLINKOTYRA*
(*valstybinis kodas – 612C18003*)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF *ECOLOGY AND ENVIRONMENTAL STUDIES* (*state code -*
612C18003)
STUDY PROGRAMME
at ŠIAULIAI UNIVERSITY

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Išvados parengtos anglų kalba
Report language – English

Vilnius
2014

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Ekologija ir aplinkotyra</i>
Valstybinis kodas	612C18003
Studijų sritis	Biomedicinos mokslai
Studijų kryptis	Biologija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4)
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Ekologijos bakalauras
Studijų programos įregistravimo data	2008-08-22

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Ecology and environmental studies</i>
State code	61203B107
Study area	Biomedical Sciences
Study field	Biology
Type of the study programme	University studies
Study cycle	First
Study mode (length in years)	Full time (4 years)
Volume of the study programme in credits	240 ECTS
Degree and (or) professional qualifications awarded	Bachelor of ecology
Date of registration of the study programme	22-08-2008

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The Centre for Quality Assessment in Higher Education

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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
1	Curriculum design of another programme <i>Environmental and professional safety</i> provided at the same faculty (list of the subjects) (EN)
2	Regulations on the performance assessment of the pedagogical and research staff, and on the order of organising open competitions at Siauliai university (LT)
3	Qualification requirements for teaching staff positions set by Siauliai university (LT)
4	Statistical data table for students admission from LAMA BPO (year 2012-2014) (LT)
5	H-indexes of the staff teaching in the programme (table) (EN)

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

Bachelor's study programme *Ecology and Environmental Studies* is given at the Faculty of Technology and Natural Sciences at Šiauliai University, in the Department of Environmental sciences. The university consists of 7 faculties, the Continuing Studies Institute, the European Studies Institute, 10 research centres, the Library, the Botanical Garden, the Art Gallery, the University History Museum, the Natural Museum, the Astronomy Observatory. The Bachelor study programme in *Ecology and Environmental Studies* is submitted for external assessment for the first time. Suggestions of the programme evaluation at the national level (Annex 5) is considered and necessary improvements are included into the study programme content. The documentation submitted to the external expertise can be considered as very well prepared (self-assessment report and annexes) providing full picture on the study programme. During the site visit the enthusiasm and dedication of the study programme as well as satisfaction of the students with the study programme can be acknowledged. The study programme is of significance for development of the region as it is acknowledged by social partners actively contributing to the content of the programme and improvement of its quality.

1.4. The Review Team

The review team was composed according to the *Description of experts' recruitment*, approved by order No 1-55 of 19 March 2007 of the Director of the Centre for Quality Assessment in Higher Education, as amended on 11 November 2011. The Review Visit to HEI was conducted by the team on 7th October, 2014.

- 1. Dr. scient Trine Johansen Meza** *Assistant Deputy Director General, Department of Quality Assurance, Norwegian Agency for Quality Assurance in Education, Norway*
- 2. Prof. dr. habil. Maris Klavins,** *Department of Environmental sciences, University of Latvia, Latvia*
- 3. Prof. dr. Borut Bohanec** *Biotechnical Faculty, University of Ljubljana, Slovenia*
- 4. Prof. dr. Jacques van Alphen** *Institute for Biodiversity and Ecosystem Dynamics at the University of Amsterdam and the Netherlands Centre for Biodiversity, Netherlands*
- 5. Prof. dr. Sigitas Podėnas** *Head of the Laboratory of Entomology, Nature Research Centre, Vilnius, Lithuania*
- 6. Inga Kalpakovaitė** *graduate of Vilnius University, Faculty of Natural Sciences, Lithuania*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The rationale for the programme lies in the needs of the regional labour market. Specialists in the field of ecology and environmental science, are in demand at the divisions of Environmental ministry, regional departments for environment protection, national and regional parks, divisions of environment protection of municipalities as well as in private business. Communication between the programme management and the stakeholders is operated in an informal manner, however seems to be efficient. The programme aims and learning outcomes are publicly accessible and the interviewed stakeholders were informed about the set tasks. The information about the programme is available at the Open Information, Counselling, Orientation System, web site of Lithuanian Association of Higher Education Institutions for Organisation of Joint Admission, the University web site's rubric For Applicants, the web site of the Department and at Facebook. The specificity of the programme lies in the strong education in natural science (chemistry, physics, mathematics, biology, environmental aspects) that enables the students to meet requirements of local labour market and enable further education at MSc level. The programme aims and learning outcomes are well defined and they are elaborated to reach the balance in respect to basic study subjects and subjects providing skills needed to be able to enter labour market already after graduation of the BSc programme.

The expert team would like to remind that accordingly to Bologna concepts full higher education cycle involves MSc degree. Possibilities to continue studies at MSc level is a factor reducing interest at BSc studies in SU. Following circulation of the draft report, the university provided supplementary information about a second-cycle study programme *Management of Natural Systems* (Master of Ecology, in the same study field as evaluated Bachelor's programme) started in 2012. The expert team is aware of this programme, however during the interviews with the students they were not aware about the possibilities to continue studies at MSc level in SU. Students rather mentioned studies at MSc level in other Lithuanian universities. Thus experts still believe that statement "Possibilities to continue studies at MSc level is a factor reducing interest at BSc studies in SU" is relevant. Programmes at other universities in Lithuania, where it would be possible to continue the studies do not have entrance requirements harmonised with the education obtained at SU, thus the graduates are somewhat reluctant to continue studies.

The knowledge provided by the programme in general is in accordance with the content of the study programmes in ecology in other EU universities and ensures need in knowledge to ensure implementation of the Lithuanian national legislation and major environmental EU directives.

The aims of the programme are based on still existing lack of specialists with general knowledge and skills in ecology and environmental management, able to fulfil vacancies in labour market.

Content of learning outcomes of the programme largely proves that the graduates will acquire competences necessary for being professional in ecology and the BSc programme sufficiently prepares students to continue their studies and find their position. The implementation of learning outcomes support practical training – placements in enterprises, state institutions, institutes.

The learning outcomes in general are sufficiently reflected and correlate with the programme content with those of the subject level.

2.2. Curriculum design

Study volume corresponds to legal requirements and the proportion of theoretical subjects, term projects, practical tasks and graduation papers are largely appropriate. However the content of the programme only partly reflects the latest achievements in science, art and technologies – the structure of the curriculum is traditional for this direction of research and studies. More attention is needed to increase volume of new study methods (group work, project work, brainstorming etc.) at the expense of traditional lecturing. The concept of the curriculum design is rather traditional and to some extent related to local possibilities to offer training, not so much following recent (and the best) trends in academic education of ecology and environmental sciences. In this respect the programme would benefit from a comparison with curriculum structure in other EU universities.

The content of the studies in general corresponds to national legal acts concerning:

1. Number of subjects per semester;
2. Study volume expressed in credit points;
3. Structure and approaches of examinations.

The scope of the programme at large is sufficient to ensure the intended learning outcomes. Sequence of study subjects in general are arranged in a logical line with only some anomalies. For example, “Microbiology and Mycology“ is put among the natural science basics, even though the course is quite specialized. The logics behind the grouping of study courses is not

always evident: it could be suggested to group study courses in semesters considering their similarity, for example, to offer courses dedicated to management aspects in the same semester. Number of electives (Alternative courses) is too high (5 alternatives), considering the low number of students and it should be reduced at first considering rationality of study process. The suggested approach to offer foreign language study options for students (Foreign Language for Specific Purposes) is positively evaluated.

The programme underwent a considerable improvement during last years and the compliance of the offered subjects with the learning outcomes is justified. Judged by the reading lists of the courses subjects are taught up-to-date, however the number of foreign literature (textbooks in English) as well as textbooks in Lithuanian in the libraries satisfies the basic study needs.

It could be suggested to include in the content of the study programme a course covering different aspects of genetics, considering the focal role of the study subject in contemporary biological and environmental sciences. Further it could be recommended to put more emphasis on application of mathematical methods, especially statistics, and modelling as well as their application. Important would be to allocate some space in the studies to different aspects of impacts of chemicals in general and toxic substances especially. To be able to find a place in labour market in the highly interdisciplinary field of studies (Ecology and Environmental Science), knowledge and understanding of its application is important and thus it could be suggested to include corresponding study course in the study programme. The programme development and self-assessment process would benefit from a study programme comparison with similar programmes in other EU countries.

2.3. Teaching staff

Qualification and form of employment of the teachers corresponds to the legislation: most have appropriate qualification, mostly PhD (20 % of study courses are covered by positions of professors, 45% by associate professors, 25 % by lecturers and 10 % by assistants). Their collective knowledge is sufficient for attaining the aims and learning outcomes of the programme. The programme benefits from the active cooperation with research institutes and other universities in Lithuania. Some researchers of other universities and institutes are involved in the programme both in form of teaching several courses and many of them are thesis supervisors. The workload of the full-time teachers is exceptionally high in an international comparison with its consequences on scientific production and fundraising (individual research project applications) of the same teachers. Supervisorship is unequally distributed among

teachers, some research areas are overrepresented (for example: pollen analysis). Technical staff seems to be underrepresented compared to needs of teachers and students. The mobility possibilities of lecturers are relatively good; however it is hampered due to a high work load. A number of lecturers use these possibilities and are actively involved in international exchange. Also it should be mentioned that teachers' mobility is not much considered at the teacher evaluation process.

The expert team did not find a presence of a comprehensive staff management plan, especially addressing improvement of research performance of the staff, the teachers' professional development. Following circulation of the draft report, university provided a reference to "Staff qualification regulations of Šiauliai University" which was approved in 2008 and is compulsory for each staff member of the University. However, analysis of the mentioned document showed that this does not indicate concrete means how the research performance of the staff in realistic time period could be improved. The expert team would like to stress an evident need to improve research performance of the staff and this requires comprehensive staff management plan.

As a consequence of the high teaching load, possibilities of teachers to do high-standard scientific research are limited. A brief test of the publication performance using *h*- index indicated poor results. The lack of a staff management plan negatively influences the publication activity of the teachers and prevents to reach international standards and the recently implemented national standards. Also the quality of research infrastructure is acceptable only for some research directions, but possibilities to perform adequate research in directions requiring use of more sophisticated equipment is limited. The existing quite limited research capacity and thus the research directions of lecturers, available resources and the diversity of the study courses offered within the study programme are not fully compliant. These factors, combined with the heavy teaching load limits teachers in realization of the need for individual research applications that would serve as financial basis of building international scientific relationships at conferences which could result in partnership in international projects.

To establish firm position of the study programme in the Lithuanian labour market and to achieve the study programme internationalization aims, further efforts should be taken to involve every staff member into active research and regular mobility. Further efforts should be taken to improve the quality of study and research infrastructure, to improve pedagogical skills of lecturers as well as proficiency in foreign language.

2.4. Facilities and learning resources

The quality of premises for studies and student research satisfy only basic needs to provide good quality education and also not in respect to all fields of studies. Actually for a significant number of study courses requiring more sophisticated equipment it is not available, for example, Cell biology, Environmental chemistry, Biochemistry etc. Some classrooms are reconstructed but many were not. There is a lack of laboratories available for the programme as well as up-to-date teaching technologies (an exception is distance study centre, however this centre is not directly involved in the study process of study programme under evaluation). At the same time facilities for few research (and study) directions is at good level, for example, research and studies in pollen analysis. There are adequate number of textbooks and practice/laboratory manuals for most of the study courses in the study programme and measures are taken to purchase the most important titles for the remaining courses. The library facilities and availability of electronic resources are of high quality and can serve as an example of efforts to be taken also in respect to learning resources in general at SU. There is access to major data bases and they are used by students at doing of their research. Learning materials in general are accessible, e- resources and e-learning materials are available and used by the students. Of importance at the study process are possibilities to do field courses and in this respect of importance are possibilities offered by the Botanical garden. At the realisation of the study process a significant role have student placements, enabling introduction to real life solutions and they are provided in close cooperation with social partners (enterprises, municipal institutions, consultancies). Student placements support student career possibilities and help for many student to find job.

2.5. Study process and students' performance assessment

As a definite problem in respect to student admission can be considered the existing student enrolment procedure in Lithuania and it is one of the reasons of the reduction of student number in the study programme under evaluation as well as in other study programmes on ecology and environmental science: during the last three years students enrolled to the Programme were very few, 7 in 2012, 2 in 2013 and 6 in 2014.

The programme schedule is rational; it includes lecturing, laboratory training, field works and placements. Lectures and classroom activities are distributed evenly as possible and sufficient time for self-education is set as well. Students receive necessary academic support, advising in respect to the content of study programme. The study result registration system is well elaborated and clear for students. Student academic performance seems to be satisfactory. Dropout rate

varies significantly between study years, but no well identified activities to reduce the dropout were presented.

Students are informed about international exchange possibilities and the outgoing student number is high (7 students in 2013) and during last years a number of incoming ERASMUS students is increasing (7 students in 2013),

Basic social support seems to be accessible and students are aware about possibilities to obtain social support.

Student performance assessment includes diverse assessment tools, their impact on the total scoring is balanced and the assessment criteria are available. The conflict resolution mechanism in the study process exists and students are aware of their rights. No complaints were found during the site visit.

The thesis assessment procedure is regulated, transparent and accessible both to students and evaluation committee. No complaints have been obtained about the final thesis assessment procedure.

Significant part of students is looking on continuing studies at MSc level, but the student information about possibilities to find job after graduation seems to be not perfect. Unless at the SU exist career days for students, it is nearly impossible to judge about their efficiency. The graduates of the study programme are mostly looking for positions in regional labour market, however in respect to regional development problems the number of “ecologists” needed in the labour market seems to be relatively low: situation probably is better in public sector, but poorer in private business.

2.6. Programme management

As a problem in respect to the management of the study programme can be considered permanently decreasing number of students and no clearly developed strategy and activities how to reverse this trend. It is evident that more efforts should be taken to improve the student enrolment and advertise the study programme in Siauliai region and also nationally to make the running of the study programme sustainable.

Programme management includes many logistic activities related to the need to arrange programme running involving lecturers from other faculties and institutes of the SU, as well as organising elaboration of BSc thesis in cooperation with institutes and social partners. From this perspective the programme is managed comparatively well, however, the management of research activities, to strengthen the position of the study programme could be more intensive.

The annual programme performance monitoring system support programme quality evaluation, monitoring and improvement. The programme staff is involved in the programme management and annual quality assurance process.

Quality assurance systems include information collection, quality evaluation and the character of the information flows includes both stakeholder input and student opinion evaluation. Students and the staff are aware about their evaluation and the decisions done using this information. Character of the information, decision flows is structured and helps to improve quality of the programme. Recommendations of the previous evaluation (at national level) are considered and implemented in the programme.

Stakeholders are represented in the programme management committee. The stakeholders are participating in the programme quality evaluation process, and it seems that this process is largely based on the personal contacts. It could be beneficial that this contact was made more formal.

Social partners take active position at the renewal of the study programme content. Social partners are involved at the realisation of the programme tasks offering placement positions to students of the study programme as well as topics for graduation thesis.

III. RECOMMENDATIONS

1.

As a major problem in respect to the further development of the study programme can be considered permanently decreasing number of students. To make the running of the study programme sustainable, identification of the study programme niche, a clearly developed strategy and activities how to reverse this trend should be elaborated and implemented.

2.

Efforts to involve every programme staff member into active research, to increase productivity and to raise the level of publications should be continued.

3.

For providing of high quality university education, the study and research infrastructure are of utmost significance. Considering the existing availability of equipment in the study field, continuation of efforts to achieve major efforts at the improvement of the learning and study resources is strongly suggested.

4.

Expert team recommends to include in the content of the study programme the study courses in population ecology, evolutionary ecology, community ecology and genetics. It is recommended to rearrange the sequence of the study courses in order of their complexity also considering the structure of similar study programmes in other EU member states. It is recommended to put more emphasis on application of mathematical methods and modelling as well as their application in ecology.

5.

Expert team recommends to include in the self-evaluation process a comparison of the study programme with the similar programmes in other EU countries.

IV. SUMMARY

The study programme is of significance for development of the region as it is acknowledged by social partners actively contributing to the content of the programme and improvement of its quality. The programme aims and learning outcomes are well defined and they are elaborated to reach the balance in respect to basic study subjects and subjects providing skills needed to be able to enter labour market already after graduation of the BSc programme. The overall content of the study programme correspond to requirements set to a BSc programme in ecology, however it could be suggested to include in the content of the study programme the study courses in genetics. Also the sequence of the study courses in the study plan could be rearranged to make the programme more logical. It could be recommended to put more emphasis on application of mathematical methods and modelling as well as their application in ecology in the study programme.

The concept of the curriculum design is rather traditional and to some extent related to local possibilities to offer training, not so much following recent (and the best) trends in academic education of ecology and environmental sciences. In this respect the programme would benefit from a comparison with curriculum structure in other EU universities.

Qualification and form of employment of the teachers corresponds to the legislation: most have appropriate qualification, mostly PhD. Their collective knowledge is sufficient for attaining the aims and learning outcomes of the programme. The workload of the full-time teachers is exceptionally high in an international comparison with its consequences on scientific production and fundraising of the same teachers. Technical staff seems to be underrepresented compared to needs of teachers and students. The mobility possibilities of lecturers are relatively good; however it is hampered due to a high work load.

As a consequence of the high teaching load, possibilities of teachers to do high-standard scientific research are limited. A brief test of the publication performance using *h*- index indicated poor results. The quality of premises for studies and student research satisfy only basic needs to provide good quality education and also not in respect to all fields of studies.

As a major problem in respect to the further development of the study programme can be considered permanently decreasing number of students and no clearly developed strategy and activities how to reverse this trend was presented. It is evident that major efforts should be taken to make the running of the study programme sustainable.

V. GENERAL ASSESSMENT

The study programme *Ecology and environmental studies* (state code – 612C18003) at Siauliai University 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	2
3.	Teaching staff	2
4.	Facilities and learning resources	2
5.	Study process and students' performance assessment	3
6.	Programme management	3
	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.

Grupēs vadovas: Team leader:	Prof. dr. Trine Johansen Meza
Grupēs nariai: Team members:	Prof. dr. habil. Maris Klavins
	Prof. dr. Borut Bohanec
	Prof. dr. Jacques van Alphen
	Prof. dr. Sigitas Podėnas
	Inga Kalpakovaitė

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Šiaulių universiteto studijų programa *Ekologija ir aplinkotyra* (valstybinis kodas – 612C18003) vertinama **teigiamai**.

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

Studijų programa *Ekologija ir aplinkotyra* yra svarbi regiono plėtrai, ir tai pripažįsta socialiniai partneriai, aktyviai prisidedantys prie programos turinio sudarymo bei programos kokybės gerinimo. Programos tikslai ir numatomi studijų rezultatai yra apibrėžti; juose gerai suderinti pagrindiniai studijų dalykai ir kiti dalykai, užtikrinantys reikalingus gebėjimus, kad bakalauro studijų programos absolventai galėtų įsitraukti į darbo rinką iš karto baigus studijas. Studijų programos turinys atitinka ekologijos bakalauro programoms taikomus reikalavimus, tačiau patartina į studijų programos turinį įtraukti su genetika susijusius studijų dalykus. Be to, studijų plane reikėtų pakeisti studijų dalykų seką, kad programa būtų logiškesnė. Rekomenduotina šioje programoje daugiau dėmesio skirti matematinių metodų ir modeliavimo taikymui ekologijoje.

Programos sandaros koncepcija yra gana tradicinė ir tam tikru mastu susijusi su vietos galimybėmis suteikti mokymą, ne itin atsižvelgiant į naujausias (ir geriausias) ekologijos ir aplinkosaugos akademinio mokymo tendencijas. Šiuo atžvilgiu būtų naudinga šios studijų programos sandarą palyginti su kitų ES universitetų programų sandara.

Dėstytojų kvalifikacija ir į(si)darbinimo forma atitinka teisės aktų reikalavimus: daugelis dėstytojų yra tinkamos kvalifikacijos, dažniausiai turi daktaro laipsnį. Jų bendros žinios yra pakankamos, kad būtų pasiekti programos tikslai ir numatomi studijų rezultatai. Visu etatu dirbančių dėstytojų darbo krūvis yra ypač didelis, palyginti su užsienio dėstytojų krūviu, ir tai turi pasekmių universiteto dėstytojų moksliniam produktui bei galimybei pritraukti lėšų. Techninio personalo, atrodo, nepakanka, palyginti su dėstytojų ir studentų poreikiais. Dėstytojų judumo galimybės santykinai geros, tačiau dėl didelio krūvio sunku jomis pasinaudoti.

Didelis darbo krūvis apriboja dėstytojų galimybes atlikti aukšto lygio mokslinius tyrimus. Trumpas paskelbtų publikacijų tyrimas taikant *h*-indeksą parodė, kad rezultatai prasti. Studijoms ir studentų tyrimams skirtų patalpų kokybė atitinka tik pagrindinius kokybiškų studijų reikalavimus (ir tai ne visų studijų kryptių).

Didžiausia problema, susijusi su tolesne šios studijų programos plėtra, yra nuolat mažėjantis studentų skaičius; be to, nebuvo pateikta aiški strategija (ir veiksmai), kaip pakeisti šią tendenciją. Akivaizdu, jog reikėtų dėti daugiau pastangų, kad ši programa taptų tvaria.

<...>

III. REKOMENDACIJOS

1.

Pagrindinė problema, trukdanti toliau plėtoti programą, yra nuolat mažėjantis studentų skaičius. Siekiant, kad ši studijų programa būtų tvari, reikėtų atrasti jai nišą, parengti aiškią strategiją (ir nustatyti veiksmus), kaip pakeisti minėtą tendenciją ir ją įgyvendinti.

2.

Reikėtų ir toliau stengtis, kad visi šios programos dėstytojai aktyviai dalyvautų tyrimuose, didėtų jų veiklos našumas ir skelbiamų publikacijų skaičius.

3.

Siekiant užtikrinti kokybiškas studijas universitete, ypač svarbu turėti studijoms ir tyrimams būtiną infrastruktūrą. Atsižvelgiant į įrangą, kuri šiuo metu prieinama biologijos krypties studentams, griežtai rekomenduojama gerinti materialiuosius išteklius.

4.

Ekspertų grupė rekomenduoja, kad į studijų programos turinį būtų įtraukti šie studijų dalykai: populiacijos ekologija, evoliucinė ekologija, (populiacijų) bendruomenių ekologija ir genetika. Rekomenduojama pertvarkyti studijų dalykų seką atsižvelgiant į jų sudėtingumą, taip pat ir į panašių kitose ES valstybėse narėse vykdomų programų struktūrą. Rekomenduojama daugiau dėmesio skirti matematinėms metodų ir modeliavimo taikymui ekologijoje.

5.

Ekspertų grupė rekomenduoja, kad į savianalizės procesą būtų įtrauktas studijų programos palyginimas su panašiomis kitose ES valstybėse vykdomomis programomis.

<...>