



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

ALEKSANDRO STULGINSKIO UNIVERSITETO
STUDIJŲ PROGRAMOS *TAIKOMOJI EKOLOGIJA*
(valstybinis kodas – 621C18002)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF *APPLIED ECOLOGY* (state code - 621C18002)
STUDY PROGRAMME
at ALEKSANDRAS STULGINSKIS UNIVERSITY

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Išvados parengtos anglų kalba
Report language – English

Vilnius
2014

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Taikomoji ekologija</i>
Valstybinis kodas	621C18002
Studijų sritis	Biomedicinos mokslai
Studijų kryptis	Biologija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2), iššęstinė (3)
Studijų programos apimtis kreditais	120
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Ekologijos magistras
Studijų programos įregistravimo data	1997-05-19, Nr. 565

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Applied Ecology</i>
State code	621C18002
Study area	Biology
Study field	Applied Ecology
Type of the study programme	University
Study cycle	Second
Study mode (length in years)	Full-time (2), part-time (3)
Volume of the study programme in credits	120 ECTS
Degree and (or) professional qualifications awarded	Master of Ecology
Date of registration of the study programme	19 May, 1997, No 565

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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.	H-indexes of the staff teaching in the programme (table) (EN)
2.	Qualification requirements for teaching staff positions set by Aleksandras Stulginskis university (LT)
3.	Statistical data table for students admission from LAMA BPO (year 2012-2014) (LT)

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

The study programme *Applied Ecology* in the study field of Biology (the former study field - Ecology and Environmental Sciences), was evaluated in 2007 and given unconditional accreditation. The study programme is given at Aleksandras Stulginskis University. In 2013, the university had 4852 students, teaching staff of 330 and a research staff of 53 persons. The university consists of five faculties including 14 institutes and 3 centres with 2 departments, academic infrastructure units (Library, International Centre, Centre for Quality of Studies and Innovation, Experimental and Practical Training Centre, Agricultural Science and Technology Park, Career Centre, Centre of Innovations and Quality of Studies), economic and social infrastructure units and administration units. The study programme of *Applied Ecology* is administered and coordinated by the Dean's Office of the Faculty of Forest Sciences and Ecology (hereinafter referred to as Faculty); the main executor is the Institute of Environment and Ecology. Teachers of the Institute of Forest Biology and Silviculture, the Institute of Forest Management and Wood Science, the Faculty of Agronomy, the Faculty of Economics and Management, the Faculty of Agricultural Engineering, the Faculty of Water and Land Management; the Centre of Cultural Communications and Education and the Centre of Mathematics, Physics and Information Technology, are also engaged in the implementation of the Programme. The goals and objectives of the programme comply with the University mission. The programme was adapted following the recommendations of the evaluation committee. However, in 2007, the evaluation committee wrote that a bottleneck of the programme was that "the teachers are not very active in the research activities" and advised that the university encourage enhancement of the academic staff activity in research works and to look for possibilities to decrease their teaching workloads. This was found still to be a bottleneck in 2014.

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 6th October 2014.

1. **Dr. scient Trine Johansen Meza (team leader)**, *Assistant Deputy Director General, Department of Quality Assurance, Norwegian Agency for Quality Assurance in Education, Norway*
2. **Prof. dr. 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 J.M. van Alphen**, *Institute for Biodiversity and Ecosystem Dynamics at the University of Amsterdam and the Netherlands Centre for Biodiversity, Netherlands*
5. **Prof. Sigitas Podėnas**, *Head of the Laboratory of Entomology, Nature Research Centre, Vilnius, Lithuania*
6. **Inga Kalpakovaitė (student representative)**, *graduate of Vilnius University, Faculty of Natural Sciences, Lithuania*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The programme aims and learning outcomes is described in the Self-evaluation report (Page 8). In general, the programme aims and learning outcomes are consistent with the type and level of studies and the level of qualifications offered. As applied ecologists need to have a large variety of skills and knowledge, the number of aims is rather high and diverse and it appears therefore that it is difficult to accommodate a broad training in all theoretical aspects of ecology together with all other skills needed in, among others, taxonomy, diversity soil biology and skills like research methods data-analysis, mathematical modelling. As a good and broad theoretical knowledge of ecology is an essential basis for becoming a good applied ecologist. We would like to recommend shifting the emphasis in teaching from a large variety of descriptive courses on different ecosystems to more general theoretical subjects. Potential students can judge the programme before entering because the LO are publicly available.

The rationale for the programme lies in the need of specialists in the field of ecology, and environmental science, trained to do research. Masters in Applied Ecology are in demand in the national labour market, e.g. in different departments of the Environmental ministry, in regional departments for environment protection, in national and regional parks, in departments of environment protection of municipalities as well as in private business. Graduates and stakeholders ensured us that there is a need for graduates of this programme in the labour market. A high percentage of graduates are working in the field of applied ecology. 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.

The programme was externally evaluated in October 2007. Major changes in the programme were implemented following the advice of the external evaluation committee. Since 1 September 2011, the programme has been updated in accordance with the requirements of the European Credit Transfer System (ECTS).

The aims of the programme are based on the demand for specialists with general knowledge and skills in ecology and environmental management, able to fulfil vacancies in labour market. The HEI interviews graduates six months after graduation to get feedback on the demands of the job market.

Content of learning outcomes of the programme largely assures that the graduates will acquire most of the competences necessary for being professional in ecology and the MSc programme sufficiently prepares students, either to continue their studies or find a position directly. The learning outcomes in general are sufficiently reflected and correlate with the programme content with those of the subject level.

The programme underwent a renewal during the last 3 years and was improved.

2.2. Curriculum design

The content of the studies 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 master programme has been prepared according to the requirements of the description of general requirements for master study programmes (provided by the Lithuanian Ministry of Education and Science, 2010) and is in accordance with the Bologna requirements.

The proportion of theoretical subjects, term projects, practical tasks and graduation papers are largely appropriate, their themes are not repetitive. Electives (Alternative courses) grouped into 3 blocs: Biodiversity, Forest Ecology and Environmental Quality. The low number of students in the programme make that they have to choose an elective courses as a group, and individuals could be forced to follow an elective programme which is not their first choice. The knowledge provided by the programme in general is broad in scope. In comparison with the content of study programmes in ecology in other EU universities, it must be noted that some of the essentials subdisciplines of ecology are not taught in the programme (i.e. Community Ecology,

Evolutionary Ecology, Life History Evolution, Conservation Biology) and that an advanced course in theoretical ecology is lacking. Pursuant to the Statute, the Ecology programme of the University undergraduate studies must provide knowledge and skills to enable the graduates to commence work in the preferred field. As graduates from the programme will advertise themselves as ecologists, graduates should have a broad theoretical background in their discipline covering all essential aspects of it.

The content of the programme reflects recent achievements in science and technologies to a certain degree, although it should be stressed again that some important sub-disciplines of ecology are lacking in the programme. Although some theoretical subjects are treated in the course “statistical methods in ecology”, we were surprised to see that advanced courses in theoretical ecology are not part of the curriculum. In stead, the courses diversity and protection or terrestrial ecosystems and the one on hydroecosystems are rather descriptive. We advise that the study programme is organized along scientific questions in ecology, instead of over study objects. We would encourage the staff to use recent English textbooks in theoretical ecology, evolutionary ecology, population ecology, community ecology, life history evolution and Conservation biology.

ASU claims that it is the only university in the country pursuing modern inter-disciplinary research, and one of the teaching aims is: The graduates must be able to adopt a holistic approach in creating ideas, evaluating different opinions and proposals. From the design of the curriculum, it does not become clear how this goal is achieved. E.g. the course in mathematics and statistics, although students learn to make ecological models, are not further integrated in the study programme. More in general, we advise that the study programme will be integrated using theory and biological organisation level.

We noticed considerable variation in the quality of Msc theses. We advise to take care that Msc theses address a clear scientific question and are based on well-defined hypotheses and to encourage an experimental approach over purely descriptive research when the study field allows this.

2.3. Teaching staff

Given the low number of students the number of teaching staff is uncommonly high. This allows small group teaching and one to one teaching. According to the students the teachers are easily accessible. They share information in Moodle or directly by e-mail, students can get consultation before exams. The University and teachers make a lot of effort to ensure high pedagogic quality of the teaching. Teaching staff of the programme meets the legal requirements and expectations

both in numbers and formal quality. The qualifications of the teaching staff are unbalanced, since active research participation does not cover the entire staff.

Teachers and administration should do more to improve attractiveness and the visibility of the programme to increase the number of students.

The high teaching load of the staff is at the cost of the time available for research. As the quality of teachers also depends on their scientific productivity, the management should actively try to make more time available for research. Given the small number of students, the obvious remedy is close collaboration or fusion with similar programmes in other universities.

Turnover in the teaching staff is achieved by recruiting PhD's trained in the same department. In addition to this, social partners are largely alumni of the programme. This creates a society of mutual admiration that becomes blind for weaknesses in the teaching programme, and prevents further quality improvements. Staff should preferably be recruited from other universities as well.

There is a major concern about the insufficiently developed knowledge and skills of English among the researchers/teachers. This is clearly problematic since English is the dominant language in science. This hampers the international visibility of the research and staff, and prevents further internationalisation. More efforts should be done to assure that teachers are using possibilities offered by EU-programs. The staff should also be encouraged to attend international conferences abroad.

The expert team did not find a presence of a comprehensive staff management plan, especially addressing the improvement of the research performance of the staff, the teachers' professional development. We remind that a foreign expert is required in search committees for new professors: the Law on Science and Studies of the Republic of Lithuania (*Official Gazette* 2009, No 54-2140), paragraph 65.5 says, that in case a competition is staged for a Chief Researcher's or Professor's position, an international expert shall be invited as member of the Committee. The expert team was content to learn from the comments to the report, that a commission for "competition and certification" for new professors has been appointed, in accordance with the Law on Science and Studies of the Republic of Lithuania (*Official Gazette* 2009, No 54-2140), paragraph 65.5., with one of the members being an international expert. We remind that for each new vacant position for a professor, the committee should have an international expert in the discipline of the vacant chair. International expert must be given all documents in English.

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 for all staff members. The staff should not be content with fulfilling the minimum requirements for publications, but should strive for excellence.

2.4. Facilities and learning resources

The quality of premises for studies and student research satisfy the basic needs to provide good quality education in a second cycle study programme. There newly built laboratory building is available for the programme as well as up-to-date teaching technologies. There are 11 laboratories (each containing 25 work places) used for the laboratory works in this programme. Further renovation of classrooms and laboratories is under way. Research works are also conducted in other infrastructure facilities of the University: the arboretum, the centre for agroecology or the laboratories of the Valley Nemunas. Recently improved infrastructure and new laboratory space, is a good example of university efforts resulting in improvement.

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 will improve, once the new library will have moved into the new building. The review panel had a chance to visit this new library building during the site-visit and movement was already started at that time. The Faculty of Forest Sciences and Ecology has 3 computer classrooms with sufficient number of workstations. Electronic data bases are also available and used by students for their research. Easy access to the Web of Science would improve the situation further. Learning materials in general are accessible. E-resources and e-learning materials are available and used by the students. However, students may need more guidance in how to search for relevant literature, as we were surprised that none of the students was capable of mentioning one or more titles of leading international journals in ecology! Students should be encouraged to use the most recent English publications in their field of study.

2.5. Study process and students' performance assessment

A problem in respect to student admission is the small numbers of students that enter the programme. In 2013, 9 students entered the full-time study programme, while eight students entered the part-time studies. The corresponding numbers for 2012 were 10 and 13, respectively

(SER Table 10, pg. 23). The department should become more active in advertising the Msc programme to Bsc-students from other Lithuanian universities and from abroad. Students receive necessary academic support, advising in respect to study programme content. The study result registration system is well elaborated and clear for students.

The Msc-thesis topics of the graduates never address general problems in ecology, but were always quite specific. The review panel found the quality of the Msc theses rather disappointing. The quality of the Msc-theses we were presented was often low in contrast to the high marks which had been given. In particular, many theses are purely descriptive instead of experimental ones and do not address clearly formulated hypotheses. Msc theses should address clearly formulated hypotheses; the methods used should be such that these hypotheses can be tested. Measures have to be taken to ensure that the Msc-thesis meet the Bologna levels.

Students have possibility to live in dormitories, and to get grants and scholarships. In their free time they can participate in other activities, sports, art, dance and etc. Students are provided with consultation about career opportunities during special events organized by administration.

The teaching process includes a variety of methods and there is a satisfactory interaction between students and teaching staff for consulting and communication. Students are involved in committees and other working groups and have the opportunity to express their ideas.

The students interviewed stated that they are well informed about the evaluation criteria, the exam times, but there is the lack of information about relation between subjects and the learning outcomes.

Students are informed about international exchange possibilities but the outgoing student number (= 3 per year) could be higher than it is now. It is difficult or almost impossible for students to use exchange programmes like ERASMUS as they have to catch up after they have returned. This is strictly against the idea behind ERASMUS and must be changed, to allow more students to participate in such programmes

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. A conflict resolution mechanism 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. The students would like to be informed about possible subjects for Msc theses earlier in the programme.

2.6. Programme management

Programme management decisions are made by the Faculty Council. The dean of the faculty and his administration administers the studies. The faculty administration is responsible for the relationship between structural units (institutes and departments) of the Faculty, and is the administrations responsibility to plan, organize and control the study process. There is a study committee in place responsible for coordinating the supervision and improvements of the study programme. The study programme committee includes external stakeholders, students and academic staff (SER, pg 29). Students have an important say in improving the study programme in close cooperation with social partners. The expert team thereby finds that the responsibilities for decisions and monitoring of the implementation are clearly allocated.

Information and data on the implementation of the programme is collected every spring term and the study programme committee analyses the information from the students, staff and employers collected via surveys. According to the SER, the programme committee uses the information to suggest changes to the faculty council. The low attractiveness of the programme is of major concern. A thorough analysis of the causes is needed. The efficiency of marketing and promoting the programme has to be improved dramatically since without recruiting more students the programme is unsustainable. Further sources for funding for students need to be explored. Either the profile of the programme must be sharpened or close collaboration or fusion with similar programmes in other universities must make teaching more efficient.

Student and graduate feedback should be used more extensively in the future and should have impact on the programme. The contact with the stakeholders is often based on personal contact between the university teachers and representatives of industry or governmental bodies and stakeholders are often graduates from the programme. We would recommend the management to have also advice from more independent stakeholders that are graduates from other universities.

III. RECOMMENDATIONS

1. Improve the skills in active and passive English of the staff. All staff members should have a reasonable command of the English language;
2. Try to make the teaching more efficient. This would liberate time for the staff to do more research and publish more. It would also make the programme sustainable, which it is not now, due to low incoming student numbers;
3. Include all essential subdisciplines of ecology in the teaching programme;
4. A Msc thesis should address a clear scientific question, formulated as testable hypothesis and using the methods that allow rejection or acceptance of the hypothesis. Instead of descriptive studies, experimental studies should be favoured where the discipline allows this;
5. The university must encourage and facilitate enhancement of the academic staff activity in research and to look for possibilities to decrease their teaching load;
6. The staff should strive to publish more and to publish more often in English in journals covered by the science citation index;
7. Given the low numbers of incoming students, and the inefficient teaching associated with it, the university should consider to merge the programme of Applied Ecology with one or more similar programmes in the country or find some other options to make the programme more sustainable.

IV. SUMMARY

The documentation submitted to the external evaluation team was very well prepared (self-assessment report and annexes) providing a full picture of the study programme. During the site visit the enthusiasm and dedication of the teachers as well as the satisfaction of the students with the study programme was evident. Recently improved infrastructure and new laboratory space, is a good example of university efforts resulting in improvement.

In general, the programme aims and learning outcomes are consistent with the type and level of studies and the level of qualifications offered.

As a major problem for the sustainability of the study programme is the drop in student numbers entering the programme due to the recent demographic transition and changes in governmental policy. This can be remediated by either an active campaign to attract students or by intense collaboration or fusion with similar programmes in other universities.

To guarantee that future graduates of the study programme remain attractive for the labour market, the study programme should prioritize further internationalization aims. This includes increased international and national mobility of staff and students, active and passive knowledge of the English language each staff member, an increase in the number and quality of scientific publications by the staff. Further efforts should be done to improve the quality of the study programme, which should include all the essential subdisciplines of ecology, e.g. by using more English textbooks. The overall content of the study programme corresponds to requirements set to a MSc programme in ecology. However, we found the quality of the Msc theses disappointing. The theses are most often descriptive studies instead of experimental ones. Msc theses should address clearly formulated hypotheses, the methods used should be such that these hypotheses can be tested.

The integration of the different disciplines of the study programme should be done in such a way that it is clear what the relation is between the different disciplines, and how these are needed to answer questions in applied ecology. In particular, we recommend putting more emphasis on the application of mathematical methods, modelling and statistics in ecology. The management of the programme is good. It is however important that the study programme committee considers different means to increase the attractiveness of the programme so that more students will choose this programme.

V. GENERAL ASSESSMENT

The study programme Applied Ecology (state code – 621C18002) at Aleksandras Stulginskis 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	3
5.	Study process and students' performance assessment	2
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.

Grupės vadovas: Team leader:	Prof. dr. Trine Johansen Meza
Grupės 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

Aleksandro Stulginskio universiteto studijų programa *Taikomoji ekologija* (valstybinis kodas – 621C18002) 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	3
5.	Studijų eiga ir jos vertinimas	2
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

Išorinio vertinimo grupei pateikta dokumentacija (savianalizės suvestinė ir priedai) buvo labai gerai parengta, joje visokeriopai atspindėta studijų programa *Taikomoji ekologija*. Vizitas aiškiai parodė, kad dėstytojai yra entuziastingi ir atsidavę, o studentus ši studijų programa tenkina. Neseniai pagerinta infrastruktūra ir sukurta nauja laboratorinė erdvė yra geras rezultatyvių Universiteto pastangų šioje srityje pavyzdys.

Programos tikslai ir numatomi studijų rezultatai iš esmės atitinka studijų rūšį, pakopą ir kvalifikacijų lygį.

Didžiausia problema, susijusi su šios studijų programos tvarumu, yra mažėjantis stojančiųjų į šią programą skaičius dėl dabartinių demografinių ir vyriausybės politikos pokyčių. Šią padėtį įmanoma ištaisyti organizuojant aktyvią kampaniją, skirtą studentams pritraukti, arba intensyviai bendradarbiaujant su kitais panašias programas vykdančiais universitetais, arba sujungiant šią programą su panašiomis kitų universitetų programomis.

Siekiant užtikrinti būsimų šios studijų programos absolventų patrauklumą darbo rinkai, reikėtų nustatyti tolesnius prioritetinius šios studijų programos tarptautiškumo didinimo tikslus.

Tai apimtų dėstytojų ir studentų tarptautinio bei nacionalinio judumo didinimą, aktyvų ir pasyvų kiekvieno dėstytojo anglų kalbos mokėjimą, dėstytojų mokslinių publikacijų skaičiaus didinimą ir jų kokybės gerinimą. Reikėtų ir toliau stengtis gerinti studijų programos kokybę (tai turėtų apimti visus pagrindinius ekologijos dalykus), pavyzdžiui, naudojant daugiau vadovėlių anglų kalba. Bendras studijų programos turinys atitinka ekologijos magistrantūros programoms nustatytus reikalavimus. Tačiau magistro baigiamųjų darbų kokybę ekspertus nuvylė. Baigiamieji darbai dažniausiai yra ne eksperimentinio, o aprašomojo pobūdžio. Magistrantūros baigiamuosiuose darbuose turėtų būti aiškiai suformuluotos hipotezės ir taikomi tie metodai, kurie suteikia galimybę patikrinti hipotezes.

Įvairūs šios studijų programos dalykai turėtų būti sujungiami į visumą taip, kad būtų aiškus jų tarpusavio ryšys ir reikalingumas, t. y. kiek jie yra susiję su taikomosios ekologijos klausimais. Mes ypač rekomenduojame labiau akcentuoti matematinių metodų, modeliavimo ir statistikos taikymą ekologijoje. Programos vadyba gera. Tačiau svarbu, kad studijų programos komitetas apsvarstytų įvairias priemones, skirtas šios programos patrauklumui gerinti, kad ją pasirinktų daugiau studentų.

<...>

III. REKOMENDACIJOS

1. Tobulinti aktyvaus ir pasyvaus dėstytojų anglų kalbos mokėjimo įgūdžius. Visi akademinio personalo nariai turėtų būti pakankamai įvaldę anglų kalbą;
2. Stengtis, kad dėstymas būtų veiksmingesnis. Tada dėstytojams liktų daugiau laiko moksliniams tyrimams atlikti ir publikacijoms skelbti. Ir programa taptų tvaresnė, nes dabar ji nėra tvari dėl nedidelio stojančiųjų skaičiaus;
3. Į studijų programą įtraukti visus pagrindinius ekologijos dalykus;
4. Magistro baigiamuosiuose darbuose turėtų būti keliamas aiškus mokslinis klausimas, suformuluotas kaip tirtina hipotezė, ir taikomi metodai, leidžiantys atmesti arba priimti tą hipotezę. Kai tai leidžia dalykai, pirmenybė turėtų būti teikiama ne aprašomoms, o eksperimentinėms studijoms;
5. Universitetas turi skatinti akademinio personalo mokslo tiriamąją veiklą ir siekti ją palengvinti, ieškant galimybių mažinti dėstytojų paskaitų krūvį;
6. Dėstytojais turėtų stengtis paskelbti daugiau publikacijų, ypač anglų kalba, aukštą citavimo indeksą turinčiuose moksliniuose žurnaluose;

7. Atsižvelgdamas į nedidelį stojančiųjų skaičių ir į su tuo susijusį neveiksmingą mokymą, Universitetas turėtų apsvarstyti galimybę studijų programą *Taikomoji ekologija* sujungti su viena ar keliomis panašiomis šalyje vykdomomis programomis arba rasti kitų galimybių padaryti šią programą tvaresnę.

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