STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus universiteto

KARTOGRAFIJOS PROGRAMOS (621F87001) VERTINIMO IŠVADOS

EVALUATION REPORT OF *CARTOGRAPHY* (621F87001) STUDY PROGRAMME

at Vilnius University

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Kartografija***
Valstybinis kodas	621F87001
Studijų sritis	Fiziniai mokslai
Studijų kryptis	Gamtinė geografija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2)
Studijų programos apimtis kreditais	80
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Geografijos magistras, Kartografijos magistras nuo 2010
Studijų programos įregistravimo data	2001-05-24 Nr. 877

INFORMATION ON ASSESSED STUDY PROGRAMME

Name of the study programme	***Cartography***
State code	621F87001
Study area	Physical sciences
Study field	Physical Geography
Kind of the study programme	University studies
Level of studies	Second cycle
Study mode (length in years)	Full-time (2)
Volume of the study programme in credits	80
Degree and (or) professional qualifications awarded	Master of Geography, Master of Cartography since 2010
Date of registration of the study programme	2001-05-24 No. 877

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The Centre for Quality Assessment in Higher Education

CONTENTS

I. INTRODUCTION

The external evaluation of the Master study programme in *Cartography* at Vilnius University (hereafter, 'the University') was initiated by the Centre for Quality Assessment in Higher Education of Lithuania nominating the international expert group (hereafter, the 'expert group' or 'assessment panel') formed by Professor Geoffrey Robinson (University of St. Andrews, Scotland – team leader), Professor Tommi Inkinen (University of Helsinki, Finland), Professor Maris Klavins (University of Latvia, Latvia), Professor Jürg Luterbacher (University of Giessen, Germany) and Dr. Miglė Stančikaitė (Institute of Geology and Geography of the Nature Research Centre, Lithuania).

The evaluation of the study programme ('the programme') made use of the following documents: Law on Research and Higher Education of the Republic of Lithuania (2009); Order on External Evaluation and Accreditation Procedure of Study Programmes (2011); Methodology for Evaluation of Higher Education Study Programmes (2010); General Requirements for Master Study Programmes (2010) and Geography Study Field Regulation (2004).

The basis for the evaluation of the study programme is the Self-Assessment Report (SAR), written in 2011, its annexes and the site visit of the expert group to the University on 20 October 2011. The Centre for Cartography ('the Centre), whose staff coordinates and delivers much of the programme, is located in the Faculty of Natural Sciences ('the Faculty'). Other contributions to the programme are made by staff from the Department of Geography and Land Management and other departments within the Faculty. The site visit incorporated all required meetings with different groups: the administrative staff of the Faculty, staff responsible for preparing the self-assessment documents, academic staff, students, graduates, and employers. The expert group inspected various support facilities and resources (classrooms, laboratories, library, computer facilities), examined students' final works, and various other materials.

After discussions and preparations of conclusions and remarks, the expert group presented introductory general conclusions of the visit to the Department's self-assessment team. The group subsequently met to discuss and agree the content of the report, which represents the members' consensual views.

II. PROGRAMME ANALYSIS

1. Programme aims and learning outcomes

The programme's main aim is to prepare a broad profile geographic information specialist who can independently and consistently perform cartographic modelling of natural and social phenomena; understands, manages and is able to master different technologies of acquisition, management, analysis and dissemination of geographic data; has skills in project management and systems analysis; is able independently to analyse geographic information and participate in decision making in political, legal and business environments; and be capable of innovation.

The programme aims are consistent with the title of the programme and largely consistent with the type and level of studies and the level of qualification offered. The learning outcomes are well formulated to take account of academic and professional requirements, public needs and the knowledge and skills needed in the labour market. The learning outcomes are appropriately mapped onto the study subjects and the offered courses and modules form a structure that is fully compatible with the overall goals of the Faculty. Possibly more attention could be paid to a broad range of transferable skills, especially those that are useful in teamwork and decision-making situations. In general, however, students graduate with a good platform for their employment. This was confirmed during the site visit at meetings with students, graduates and employers, all of whom were satisfied with the skills and knowledge levels achieved in this programme. They reflect recent trends of international developments in the field - it seems there is a continuing need for specialist cartographers with the knowledge and skills acquired in the programme. The labour market in this field at present appears far from being saturated and the employment record of graduates is good. Employers who met with the expert group confirmed both the existing need for graduates from this programme and also anticipated a stable demand over coming years. Recent developments in the field have led to a growing influence in decision making related to GIS; this translates into a sustained annual demand for 10 new specialists, more than typically graduate from this programme.

In recognition of the continuing developments in the field, especially in GIS, the programme aims are not only directed to operational tasks, but also towards future developments. From the expert group's viewpoint, however, the focus, as in the present programme, is too much on applied aspects of cartography and too little on scientific and theoretical studies. This appears to have a negative impact on the staff's research performance and adoption of a research-based education concept.

The expert group acknowledges that the programme falls into the applied-science category, where analytical applied activity and professional qualification development is orientated to preparing students for other professional activities rather than research or teaching. Nevertheless, amongst the legal requirements for second-cycle studies is the need to "ensure that, having completed this programme and acquired Master's qualification degree, the graduate is sufficiently competent, i.e., the graduate: will have acquired sufficient knowledge in the studied academic branch, will have acquainted with the latest theories, methods and technologies in the studied branch, and is skilled to apply this in practice; *will be able to perform research on his own, creatively applying the familiar analysis methods,* will be aware of the method application limits, *will be able to assess the research findings and identify their reliability and validity*; will be able to critically evaluate and apply theoretical and practical innovations". It is the aspects italicised above that the expert group considers to be addressed inadequately in the programme. That also appears to be the view of some of the employers who met with the group and voiced suggestions that the programme should pay more attention to scientific approaches in the theory and applications of GIS and cartographic programmes.

Main strengths and weaknesses

Strengths

The programme's aims and outcomes are directed towards satisfying national needs in the labour market; the need for specialist cartographers, especially in GIS-related employment, is expected to continue in coming years.

The formulations of learning outcomes are clear; the outcomes are achievable and well mapped into the subject courses that make up the programme.

The learning outcomes incorporate recent international trends of development in the field and continue to look to the future.

Weaknesses

The programme aims are rather too focused on cartographic applications rather than on the development of cartography and GIS (where 'S' is alternatively 'System' or 'Science') as a science. The master level of study requires a stronger orientation towards acquaintance with the basic skills of scientific research and the development of a scientific mentality.

2. Curriculum design

The curriculum complies with the requirements of national legislation and conforms with the general aims of university education to train Physical Geography Master-level graduates in Cartography. The content of the subject courses is largely consistent with the type and level of the studies. The expert group's concern about the balance between applied and theoretical dimensions of master-level studies has been noted above, in the section on *Programme aims and outcomes.* The content and methods of the study courses are appropriate for the achievement of the intended learning outcomes, which focus on the skills necessary for fulfilling tasks common in employment of cartographers. There is sufficient coverage of major study elements:

- the number of subjects offered to students is adequate to enable the achievement of the learning outcomes;
- the number of study subjects dedicated to developing cartographic skills is good;
- independent studies are sufficient and fit well in the curriculum structure;
- projects and independent studies are well embedded in the curriculum as subjects with aims and outcomes consistent with those of the whole programme.

It can be considered, therefore, that the scope of the programme is sufficient to ensure the stated learning outcomes. The study content and the student workload are spread evenly within the timetable, the courses are not repetitive and the contents are consistent with the level of studies The sequence in which the subjects are studied is logical; they are all obligatory and generally support achievement of the programme aims. The programme design also allows graduates from other universities to enter and successfully study.

The content of the programme generally reflects the latest achievements in science, art and technology that are represented in cartography. The curriculum has been developed in close cooperation with social partners. Recent trends of development in the field, especially in new technologies, have influenced the curriculum design. Judged by the reading lists of the courses and the content of the thesis, the teaching of subjects is up to date.

Featuring less in the programme, however, are the skills needed for scientific research in cartography – the basic skills to advance cartography as a science, not just in its application. The content of the study courses dedicated to research methodology was not explained to the expert

group. What was gleaned, however, from the SAR and from the various meetings of the site visit does not suggest approaches that would develop skills common in pursuit of a research career.

On the whole, the curriculum supports the development of good social skills and spatial awareness ("cartographical thinking") of graduates, which employers value. Employers also value, in particular, the knowledge of mathematics and good understanding of the basics of GIS that graduates have, at the same time expressing the wish that future programme developments will advance mathematical knowledge and the science of GIS even more. The expert group would also encourage programme developments to allocate some time for practice placements. This would be of benefit both to students and employers, in that it would strengthen still more the motivation of the students and their platform for entering employment. It could also benefit the staff, in that students can be instrumental in informing the programme, especially given the small numbers and good staff-student relations.

Main strengths and weaknesses

Strengths

The curriculum design process takes cognisance of the needs and suggestions of employers and other social partners and practitioners.

Students, in acquiring the practical skills and knowledge to be able to act as cartographers after graduation, are kept up to date with trends of development in cartography.

Weaknesses

Although the curriculum ensures that students achieve all the intended learning outcomes to enable them to work on cartography applications, it does not sufficiently promote abilities to conduct scientific research.

3. Staff

There are nine academic staff involved in delivering the programme; eight of them are full-time teachers from the University (seven are professors or associate professors), three in the Centre and four from elsewhere in the Faculty. Three of the staff hold permanent part-time appointments and hold senior management or technical positions in businesses that employ practitioners in the programme's cartographic fields. Their industrial experience is a valued contribution to the programme. Similarly, one staff member is a head of department at Vilnius Pedagogical University and another is head of a department in the Institute of Geology and Geography. Their research and training experience in other institutions adds value to the Centre's teaching. The number of staff and their qualifications are adequate to enable the achievement of intended learning outcomes. Staff qualifications and the areas of their research activities generally cohere (with few exceptions) with the subjects taught.

The age profile of staff shows that only two members are younger than 40 years, and one more is under 50. To date, staff turnover has not posed problems for delivery of the programme. The Centre is concerned, however, for the future. When some senior members of staff retire, it may well be difficult to comply with the requirements relating to the number of full professors delivering the programme. Under current regulations and available finance, it is difficult to recruit staff who can command much higher salaries and benefits in industry. It may need

attention to the professional development of the younger staff members to be qualified for full professorships and also to ensure their smooth transition into the assumption of senior responsibilities.

Some of the academic staff has a very high workload, a factor to be considered in relation to research activities. For the future, it could be that additional appointments, changes of personnel (the challenge of recruiting well-qualified younger staff as others retire) and the participation of PhD students in the study process might enhance the delivery of the programme. Especially important could be the extension of active cooperation with researchers from other related fields (geosciences, physical sciences, social and technological sciences), all with the purpose of enhancing staff members' scientific research activities.

At present, such developments seem unlikely to happen in the near future and the research performance of the staff remains an issue. The teaching staff of this programme, uniquely among the University's geography programmes, has little involvement in research directly related to the programme. Most worryingly, some displayed to the assessment panel a very negative attitude with respect to active involvement in research, especially in internationally acknowledged research. This attitude is undoubtedly related to the weaknesses identified in the sections on *Programme aims and learning outcomes* and *Curriculum design*. To reiterate, the curriculum does not sufficiently promote abilities to conduct scientific research. The master level of study requires a stronger orientation towards acquaintance with the basic skills of scientific research and the development of a scientific mentality. The staff does not demonstrate that mentality. Their main scholastic activities are not in research but rather engagement in the production and marketing of a significant number of high-quality thematic maps and atlases. These activities include involvement in the preparation of the National Atlas of Lithuania, but most atlases are mainly for use in schools. Staff is enthusiastic about this involvement in cartographic publications in which they demonstrate a high level of professional skills, but that does not compensate for a poor level of research activity. During recent years, staff involved in teaching this programme have published their own research results, from mainly local and national projects, in mostly national papers; even at this level the publication record is poor. Staff also publishes student-orientated methodological studies, which are useful contributions to teaching and learning.

With regard to opportunities for staff development, staff is legally entitled to a period of study leave in every fifth year. When they met with the assessment panel, however, the staff claimed that they could not use this opportunity because of their large workload in the study process. They do participate in a variety of scientific events and programmes, local and national research projects, and many applied projects. Most of the staff are members of the *Lithuanian Cartographic Society* and participate in scientific activities of the umbrella organisation, the *International Cartographic Association.* The international conferences that they attend are largely those that are held in Lithuania, where interaction with cartography specialists from abroad is beneficial. Staff periodically attends courses offered by partner companies and software providers to upgrade their qualifications in the use of proprietary software. There is a limited amount of staff mobility, mainly short-term (one-week) visits to and from a small number of foreign universities, both within and outside the ERASMUS framework. These experiences all contribute to programme enhancements.

In short, the staff are very busy and enthusiastic about their teaching and map-making activities. It is the poorly developed scientific mentality among the majority of staff that most seriously concerns the expert group. Without that mentality, it is unlikely that the lack of scientific research and especially international publications will be addressed. The expert group recognises, however, the difficulties of recruiting highly qualified young staff when employment in the cartographic and GIS businesses attracts salaries several times higher than the University can offer.

Main strengths and weaknesses

Strengths

The programme is in the hands of an enthusiastic and well-qualified staff, which supports the quality of the studies and enables the achievement of the intended learning outcomes.

The staff seems to be largely competent in the subjects they teach, actively participating in *applied* projects directly related to the study programme content.

Weaknesses

The workload of the programme leaders is much too high to provide adequate time for active participation in scientific research work.

The staff in general has a poorly developed scientific mentality. This is reflected in their poor record of research activities: projects are mainly local or national; published research results are only in national journals; and even at that level, the record is very modest. Undoubtedly, this weakness impacts negatively upon the programme's aims and outcomes with regard to graduates' acquaintance with the basic skills of scientific research.

4. Facilities and learning resources

The programme has the use of classrooms and laboratories of a size that is more than adequate for the number of students. Laboratory equipment and facilities, however, are very dated. Despite the claim in the SAR that hardware is updated at the rate of 10-15 per cent each year, the expert group saw equipment that was decades old, although it had then been state of the art. The equipment probably covers at least the minimum requirements for teaching and basic work in preparing theses.

Software developments in this study field are rapid and the programme relies on software provided free by producers. ArcGIS is the main software used in teaching and projects; it is also the main commercial software used in Lithuanian institutions and businesses. The site licence is donated by ESRI and includes the facility for students to use the software on their own computers. Other commercial cartographic software used for learning purposes is upgraded approximately every three to five years; the newest open source and trial cartographic software products are widely used by staff and students. Working with recent versions during their studies, supported by staff who make use of updating opportunities provided by the producers, makes the transition into subsequent employment technically easy. Graduates and employers who met with the assessment panel confirmed this.

The same applies less in respect of hardware, which is of inadequate quality. Students have access to all the hardware of the Centre and the Faculty but the computer classrooms visited by the expert group were poorly equipped. Upgrading is planned. An EU-funded project will allow a complete replacement of the computer classroom's obsolete equipment and the purchasing of modern photogrammetric stations that are to be shared with the departments in the Faculty. Additional funding will be needed, however, if maintenance, periodic replacement and consumable items are to be adequately provided. Currently, some maintenance has to be carried out by academic staff, a further contribution to high workloads.

There are no formal arrangements for students' practice placement. The expert group was surprised to note that practice placements (internships) had been removed from the programme on the recommendation of an external assessment in 2004. Social partners occasionally provide practice places for students interested in gaining practical commercial experience. As suggested above, in the section on *Curriculum*, the current external assessment panel believes that such internships would be of considerable benefit to the programme.

Literature resources are just about adequate for the programme's main aims and learning outcomes. The main textbooks used for the programme, and available in the Faculty, are quite dated, especially with regard to GIS. They mostly date from between 1997 and 2005. Holdings are generally limited and programme staff attempt, quite successfully, to bridge the gaps by loans of their own copies of texts. More up-to-date literature is also available as texts or in the virtual campus online courses for deeper specialization in GIS methods, provided my ESRI as part of the site licence for ArcGIS. Literary resources to support scientific research, especially in GIS, are poor in comparison to expectations in other European university cartography programmes. Currently, the University library subscribes to many full-text electronic databases. This is admirable, but it doesn't satisfy all needs; inspection of the MSc theses revealed only a very limited use of scientific literature.

Main strengths and weaknesses

Strengths

GIS and cartographic software provision that enables the achievement of intended learning outcomes, including good preparation for commercial employment in the field.

Secured EU funding that will enable investment in new computing and photogrammetric equipment.

Weaknesses

Laboratory equipment and facilities are very dated.

Technical support and current funding for maintenance and regular replacement of equipment are inadequate.

Literature resources to support scientific research are poor.

The lack of practice placement (internship) opportunities.

5. Study process and student assessment

Admission requirements are well founded and centrally administered by the University. The requirements are unified, expressed in a specific formula, independent of the university and programme from where the applicants received their bachelor degree. They enable selection of well-qualified and motivated students from a diversity of bachelor level programmes. Students regularly fill all state-funded places, typically constituting the total entry of eight to 10, with high scores in the competition for entry. The students' different academic backgrounds and experiences when they start the programme, however, can prove a challenge for the programme management in needing to ensure equal opportunities for students to progress. The students who met with the expert group appeared to be highly motivated and fully engaged with the programme.

The organisation of the study process ensures an adequate provision of the programme and the achievement of the intended learning outcomes. Classes, all compulsory, are evenly distributed during a week and over a semester, in a schedule that is designed to accommodate the time constraints of students who are also in employment. Studies are evenly balanced between taught classes and self-study times; and divided 58 per cent theoretical classes to 42 per cent practical. The workload for students is quite high but they offered no adverse comments about these arrangements. An occasional feature is an intensive training course offered free of charge by a social partner, HNIT-Baltic; in 2011 it covered 30 person days in spring and is a good example of the interaction between the programme and social partners who employ a good number of the graduates.

Students receive all necessary information at the beginning of each study course, regarding the aims and outcomes, the modes and timing of assessments and the performance requirements for particular grades. From the start of the programme, students are expected to begin preparatory work on a research project, either in a theme proposed by themselves or chosen from a list offered by the staff. Each project has a scientific advisor and adequate supervision is provided right through to the final preparation and submission of the thesis. This concludes the programme and is one of the most important components, demonstrating the acquisition of knowledge and practical skills. Consistent with the main activities of the staff, however, most theses deal with practical applications of cartography and GIS rather than engage in scientific research.

The assessment system of students' performance is clear, adequate and publicly available. The timetable of assessments as far as possible accords with student preferences for times and dates, subject to approval by the staff and the Faculty. This is normally given, provided that formal requirements are satisfied and suitable accommodation is available. Procedures for submitting and defending the final thesis are clear and rigorous. They are well understood by students and by all involved in evaluating the thesis. There are well-regulated opportunities to repeat an academic subject. The system of resolving areas of dispute by students appears to be well understood, although there have been no cases of students' complaints in the programme thus far. Students voiced no complaints at all about the assessment procedures. The assessment criteria are well matched to the programme's intended learning outcomes and students' academic performance is satisfactory.

With regard to student mobility, students receive information about international exchange possibilities. There are opportunities to attend foreign universities for one term, where a similar programme runs, using the ERASMUS student exchange scheme. Over the period 2006-2011 there were only six outgoing students in this scheme, none in 2011. Over the same period, 10 students have joined the programme under this scheme, mostly from Germany. Student mobility is hence another aspect for improvement of the programme's international perspective.

Students receive adequate academic support. Information about the programme is consistent and provided at appropriate times. The small number of students and the good staff-student relations that prevail mean that teachers are readily available to students and communicate freely with them. One-to-one consultations about study progress and careers advice are normal features of student support. As noted above, all students in the programme is state funded, which is a good indicator of the quality of the students entering the programme as well as a good basis of financial support. The University provides additional financial support in a number of ways. Scholarships reward certain academic successes or are directed to the social support of students with disabilities or other handicaps to study, such as serious illness or bereavement. Counselling and advisory services are available to help and guide students experiencing study difficulties. The University provides many opportunities for scientific, cultural and sports activities.

The assessment panel observed that, in a sense the relationship between the programme and employers is almost familiar. This can be both a strength, in terms of securing employment, but also a weakness, in that programme management can be somewhat insulated against external influences. Part-time staff whose other employment is as professional practitioners in commercial enterprises carry out a good proportion of the teaching. The programme is tailored to cohere with employers' requirements, in which scientific research features little. The commercial or social partners employ graduates who have been trained and acquired the knowledge and skills to equip them for employment in those enterprises. It is therefore inevitable that the professional activities of the majority of graduates meet the programme provider's expectations.

Main strengths and weaknesses

Strengths

The study process and student assessment are functioning well, ensuring the graduation of well-qualified specialists in the field.

Employment prospects for the graduates are good and would appear to be so for the foreseeable future.

Weaknesses

Thesis topics reflect the work in cartographic applications that dominates the work of the academic staff and there is considerable room for improvement in the quality of thesis.

6. Programme management

Operating within the regulatory framework of the State, programme management is at three levels: University, Faculty and Centre. Responsibilities for internal regulation, decisions and monitoring of the implementation of the programme are clearly allocated. Operational control and direct responsibility for implementing the programme are with the Centre. Here the Head,

the staff and the programme committee deal variously with matters that include organisation of the study process; provision of facilities and learning resources; improvement of study quality; allocation of teaching loads; changes of curriculum, subject preparations and descriptions; relations with social partners; and confirmation of supervisors for theses and research papers. Programme management is generally effective; an exception has been the inability to secure adequate funding for regular periodic upgrading of equipment and learning resources. That is doubtless a problem that pervades the University and it is to be hoped that the recent acquisition of European funds will improve matters. It is clear, however, that equipment purchased from European structural funds will need financial support in operating and maintaining it. Investments from local sources will need to be greatly improved if the European funding is to have a long-term effect in improving study and research quality.

The evaluation and improvement processes involve stakeholders. Students are represented on the programme committee and on the council of Faculty. Social partners are also represented on the committee; they play an important advisory role there and in their various contacts with staff and students. Employers and alumni who met with the assessment panel expressed their appreciation of the good relations they enjoy with the programme and their ability to be heard in discussions about programme enhancements.

Internal quality assurance procedures are efficient and mainly effective. All bodies involved at the various levels have clear monitoring and reporting responsibilities. The University's general system is based upon European Regulations for internal study quality assurance; the so-called 'Dublin descriptors' or guidelines; UK guidelines for geographical studies; and guidance from the Lithuanian Centre for Quality Assessment in Higher Education. The periodic surveys of study disciplines and teaching quality are an important part of the process. Other information is regularly gathered from teaching staff, employers and other social partners. The close cooperation with major stakeholders has resulted in improvements of the programme content and enhanced the ability to follow recent trends in developments in the field of cartography and GIS technologies. Within the Centre itself, given the small numbers of staff and students and the good relations between them, a more formal framework for quality assessment is not seen as a high priority.

The programme committee has learned lessons from previous evaluations. In particular, an external assessment in 2004 led to some significant enhancements, especially in securing donations of software and other material resources by social partners. An important element in programme management, however, is the management of the staff resources. This includes ensuring their academic development and equal distribution of their workload. In this respect, the situation is not so good as far as the workloads of the programme leaders are concerned. The weight of their work is skewed towards lecturing activities, not leaving much time for their research, personal development and practical activities.

Main strengths and weaknesses

Strengths

The involvement of stakeholders in the programme management.

The design and operation of the University's internal quality assurance system to align with international standards.

The willingness to apply the results of internal and external evaluations to improve the programme.

Programme management with respect to work with students functions well and supports a good quality of studies.

Weaknesses

Management of staff resources does not support a necessary improvement in the research activities of the lecturers.

III. RECOMMENDATIONS

1. Revise the programme's aims and outcomes and the curriculum to provide acquaintance with and acquisition of the basic skills of scientific research and promote the development of a scientific mentality. These are prerequisites if the implementation of all other recommendations is to be effective.
2. Reduce the workload of the programme leaders to allow time for them to improve their research productivity and provide opportunities for staff who are not full professors to pursue advances in their qualifications and level of appointment.
3. In tandem with 3.2., take whatever steps are required to raise the level of scientific activity and especially its international context, research and publication to at least the level of the most active contributors to the programme and hence raise the Centre's and the programme's international visibility.
4. Take steps to secure internal financial support to operate and maintain equipment purchased with the aid of external funding and to provide an appropriate level of technical support.
5. In consideration of the overtly applied character of the programme, restore student placements (internships) to the programme; this would enhance students' motivation, which is already high, and strengthen their platform for entering employment.

IV. GENERAL ASSESSMENT

The study programme Cartography (state code – 621F87001) is given **positive** evaluation.

Study programme assessment in points by fields of assessment.

No.	Evaluation Area	Evaluation Area in Points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Staff	2
4.	Material resources	2
5.	Study process and assessment (student admission, study process, student support, achievement assessment)	3
6.	Programme management (programme administration, internal quality assurance)	3
	Total:	**16**

*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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