



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

KAUNO MIŠKŲ APLINKOS IR INŽINERIJOS KOLEGIJA
STUDIJŲ PROGRAMOS
KADASTRINIAI MATAVIMAI IR NEKILNOJAMOJO TURTO
VERTINIMAS (valstybinis kodas – 653H14005)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF CADASTRAL MEASUREMENTS AND REAL ESTATE
VALUATION (state code – 653H14005)
STUDY PROGRAMME

At KAUNAS COLLEGE OF FORESTRY AND ENVIRONMENTAL
ENGINEERING

1. **Prof. Dr. Bernd Teichert (team leader), *academic***
2. **Prof. Dr. Artu Ellmann, *academic***
3. **Assoc. Prof. Eloina Coll Aliaga, *academic***
4. **Ms Vytautė Juodkienė, *academic***
5. **Mr Audrius Petkevičius, *representative of social partners***
6. **Ms. Neringa Vaičiūnaitė, *student representative***

Evaluation Coordinator –
Ms Kristina Selezniova

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Kadastriniai matavimai ir nekilnojamojo turto vertinimas</i>
Valstybinis kodas	653H14005
Studijų sritis	Technologijos mokslai
Studijų kryptis	Bendroji inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (3), iššęstinė (4)
Studijų programos apimtis kreditais	180
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Matavimų inžinerijos profesinis bakalauras
Studijų programos įregistravimo data	2009 m. birželio 17 d., Nr. 1-73

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Cadastral Measurement and Real Estate Valuation</i>
State code	653H14005
Study area	Technological Sciences
Study field	General Engineering
Type of the study programme	College studies
Study cycle	First
Study mode (length in years)	Full-time (3), Part-time (4)
Volume of the study programme in credits	180
Degree and (or) professional qualifications awarded	Professional Bachelor in Measurement Engineering
Date of registration of the study programme	17 June, 2009, No. 1-73

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The Centre for Quality Assessment in Higher Education

CONTENTS

I. INTRODUCTION	4
1.1. Background of the evaluation process	4
1.2. General.....	4
1.3. Background of the HEI/Faculty/Study field/ Additional information	5
1.4. The Review Team.....	5
II. PROGRAMME ANALYSIS	5
2.1. Programme aims and learning outcomes.....	6
2.2. Curriculum design	7
2.3. Teaching staff	9
2.4. Facilities and learning resources	11
2.5. Study process and students 'performance assessment.....	12
2.6. Programme management	14
III. RECOMMENDATIONS	16
IV. SUMMARY	17
V. GENERAL ASSESSMENT	20

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 the 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 (hereafter - SER) and annexes, the following additional documents were provided by the HEI during and after the site-visit:

No.	Name of the document (name of electronical file)
1.	Methodology of evaluation of final theses (in Lithuanian language)
2.	Letter concerning the programme name (in Lithuanian language)

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

Kaunas Forestry and Environmental Engineering University of Applied Sciences (hereafter - college) performs first-cycle studies within the areas of biomedicine and technological sciences. The structure of college comprises of Environmental Engineering Faculty; Forestry and Landscape Architecture Faculty; Department of vocational training; Information centre and other subdivisions. According to SER (page 4) management of the college is specific as functions that are otherwise performed by faculties are attributed to departments, which organize and coordinate studying, education, consultation, etc. Departments are guided by heads and their deputies. The four departments are supervised by the college Deputy Director for academic affairs.

Department of Real Estate Cadastre of the Faculty of Environmental Engineering is implementing the study programme of Cadastral Measurements and Real Estate Valuation (code - 653H14005, hereafter to be referred as “the study programme”). This study programme was launched in the college on 1 September 2007, following the order of the Minister of Education and Science No ISAK 26 of 5 January 2007. However, it appears that the current external evaluation for the study programme is conducted for the first time (SER, page 5).

1.4. The Review Team

The review team was assembled in accordance with the *Expert Selection Procedure*, 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 May 04, 2016.

1. Prof. dr. Bernd Teichert (team leader), former professor at the University of Applied Sciences, Dresden, Department of Surveying and Cartography; Research assistant (Physical Geodesy) at the Technical University of Berlin, Germany.
2. Prof. Dr. Artu Ellmann, professor at Tallinn University of Technology, Faculty of Civil Engineering, Department of Road Engineering, Chair of Geodesy, Estonia.
3. Assoc. Prof. Eloina Coll Aliaga, associate Professor in the Cartographic Engineering, Geodesy and Photogrammetry Department, Politechnic University of Valencia, Spain.
4. Ms Vytautė Juodkienė, Lecturer at Department of Geodesy at Kaunas College, Lithuania.
5. Mr. Audrius Petkevičius, CEO of LLC „Urbanistika“, Lithuania.
6. Ms. Neringa Vaiciunaite, PhD student of Materials Engineering at Kaunas University of Technology, Lithuania.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The study programme aims and learning outcomes are defined in SER (pages 6-9). The study programme is aimed at preparing highly qualified specialists of cadastral measurements and real estate valuation, who would gain knowledge and skills of identifying and specifying cadastral data of land parcels, buildings, engineering structures and forests as well as valuating real estate. After completing the study programme a student is expected to gain professional competence, which allows him/her to conduct cadastral measurements of real estate objects, arrange documents for real property transactions and legally register them, form and rearrange land parcels, compile plans and cadastral maps of various purposes, store, systematize, analyse the data concerning real estate objects. Accordingly, the study programme comprises two specializations: (i) Real Estate Cadastre and (ii) Real Estate Formation and Valuation.

The study programme aims and learning outcomes are oriented towards applicability of practically-tested scientific knowledge and typical engineering solutions, i.e. preparation of specialists for practical activities. Thus, the objectives of the programme and the expected learning outcomes of the studies seem to be consistent with the type and level of studies and the level of qualifications offered. In particular, the graduates of the study programme can apply (after fulfilling certain requirements for professional experience) for level 6 of the Lithuanian qualification framework. The aims and expected learning outcomes of the study programme are partly (for a more extended discussion see below) matching with expectations of typical employers and conform regulations of engineering and technology study area. According to SER the objectives and outcomes are in line with the provisions and professional requirements established by Lithuanian legal acts (listed in item 23 in the SER pages 7-8) for the specialists in this field of activity.

Interviews with the college teaching staff and graduates revealed, however, that in May 2012 the national Real Estate Valuation legislation was changed, which has negatively affected the Real Estate Formation and Valuation speciality of the study programme. More specifically, it appears that in this sub-field un-supervised professional activities can only be executed by those granted with relevant university degree (e.g. Real Estate Evaluation, offered in some Lithuanian universities) only. The unfortunate consequence of this is that the number of students interested in choosing the Real Estate Formation and Valuation speciality has dropped dramatically during recent years. The interviews also revealed that the majority of the recent graduates with the Real Estate Formation and Valuation specialisation are mainly employed within the field of cadastral surveys or real estate formation, but only a few in real estate valuation. Therefore, reaching the SER-defined

aims and learning outcomes for the Real Estate Formation and Valuation specialisation students/graduates may be jeopardized.

The study programme revision process is quite flexible (for changes not exceeding 20% of the volume of the programme) and changes are introduced annually (item 24 in the SER page 8), responding the needs of contemporary professional and technology developments. According to SER (item 14 in page 6) the latest adjustment of the aims and learning outcomes of the study programme originates from September of 2015. Unfortunately, there was no evidence (neither in SER nor during the interviews), that implications due to the Real Estate Valuation related legislation changes are considered by the recent updates of the study programme. In particular, these implications may require alterations of the aims and learning outcomes for the Real Estate Formation and Valuation specialisation related subjects.

Therefore the name of the programme, its learning outcomes, content and the qualifications offered are only partly compatible with each other. Since the students (and even the social partners) were not showing much interest toward the Real Estate Formation and Valuation specialisation then it is recommended to reassess the present status of the specialisation, with a desirable result that the programme graduates would gain a better access to this particular segment (Real Estate Formation and Valuation) of labour market.

One of the most important evidences for reaching the learning outcomes is also the quality of final theses. The review team discovered deviations from the methodological requirements for final theses, e.g. some theses appeared to be too short (i.e shorter than the required 35 pages minimum) and/or references to foreign literature were entirely missing or just a few used. Yet, some such theses that deviated from the methodological requirements were given the highest marks. Thus it is suggested to ensure that all the theses to be defended will correspond to the college's own requirements for theses compilation.

The generalized learning outcomes are made publicly accessible in the college website (www.kmaik.lt) both in Lithuanian and English languages. Furthermore, the detailed aims and expected learning outcomes for each study subject can also be found in the college websites both in Lithuanian and English languages. The latter supports the efforts of the college administration for further internationalisation of the college and the particular study programme.

2.2. Curriculum design

According to the SER Table 4 (page 10) and the annexes the curriculum design meets the general legal requirements. The study programme duration is 3 years for full-time and 4 years for part-time

studies, respectively. Programme volume is equal to 180 ECTS credits, from which the study field subjects consist of 141 ECTS credits (78%). The volume of each year is 60 ECTS credits in full-time and 45 ECTS credits in part-time studies (SER, page 10). According to SER (Table 5, page 11-12) the study subjects for the full-time studies are spread evenly per semester, 30 ECTS each. For the full-time studies lectures compose 18% of study programme; theory is given in the form of lectures, seminars, demonstrative sessions and discussions. 36% of the curricula volume compose practical assignments, which are divided into practices, laboratory works and term papers. Students' self-study amounts to 46% of total time for both full- and part-time studies (SER, page 13). Curriculum has minimum share (5%) of optional courses. Students can choose one of three optional social courses in the second semester and then one optional subject per semester in the third, fourth and fifth semesters. Optional courses can be chosen from the list of all college's optional courses or subjects offered by other HEI's (SER, page 12). The latter option has not been selected by the students during the recent years, though.

The content of the subjects is consistent with the type and level of the study programme. The content and methods of the subjects are appropriate for the achievement of the intended learning outcomes (however, see the above remark about the Real Estate Formation and Valuation specialisation). It also seems that due to recent change in legislation the scope of Real Estate Formation and Valuation speciality need to be re-focused. Positively, the course literature list of many study subjects (described in the SER Annex 1) includes some recent and relevant foreign literature items. Recent technological advancements in land surveying technology (such as unmanned aerial vehicles) are demonstrated by social partners (cf. item 90, SER page 21). Traditional teaching techniques (lectures and exercises) comprise the basis for the teaching, alongside with practice based learning and self-studies. Small study groups facilitate rather personalised communication between students and teachers. Moreover, there are indications that foreign exchange students (the number of such students in the study programme has not exceeded 2-3 at any given time during the past few years) receive individual lectures in the English language. Such an opportunity is appreciated by the students. Part-time studies are reasonably integrated with full-time studies. The full-time students were satisfied with the teaching, but indicated need for more practice. Some interviewed graduates were concerned with length of the Final Practice of Professional Activity, more particularly, assessing the duration of final practise being insufficient. On the other hand, there are also indications that Professional Practice in Geodesy 1 (9 ECTS, offered to the students after the first year of studies) can be completed within (intense) three-four weeks, which may show inadequacy of ECTS credits for this particular subject. It is suggested re-

assessing the organisation of the aforementioned disciplines, with possible re-allocation of related ECTS credits.

Currently, however, several courses necessary for land surveying (this is relevant, since the cadastral surveyors need to perform general land surveying tasks as well) are missing in the curriculum. For instance there are not enough subjects tackling contemporary remote sensing technologies and spatial data modelling approaches. Note that demand for such skills is progressively increasing in the labour market. Furthermore, establishing remote sensing and spatial data modelling competence in the college would also be advantageous for elaborating interdisciplinary research with other departments of the college (such as forestry research, which could benefit tremendously from the remote sensing technologies and corresponding spatial data processing novelties) or even other research groups at other HEIs.

2.3. Teaching staff

According to SER there was quite high turnover of the teaching staff due to moving one of the academic units from rented premises in the Kaunas downtown to the college campus (in the Kaunas suburbs) in 2008-2010. Contemporarily, the teaching staff turnover seems to be stabilized (SER, page 15), however, the number of full-time teachers with college's as their primary affiliation seems to be insufficiently low. For instance 27 teachers (altogether fulfilling only 7.2 teaching positions) were involved in the study programme in the 2014/2015 academic year (SER page 16, Table 9). Out of these teachers 13 (46%) work currently in the Department of Real Estate Cadastre of college. However, only for 4 of them the college is their primary workplace, whereas for the rest (9 teachers) the primary affiliation is elsewhere. This could be (or become) a problem due to limited accessibility of students to part-time teachers. This also might be an obstacle in furthering co-operation with other faculty members. Nevertheless, due to relatively small number of students, the number of full and part-time students for one teacher's position is 9 in both cases. The ratio of senior teachers, mid-career teachers as well as the teaching assistants is in a good balance. The average age of academic staff of the study programme is 46.6 years (SER, page 16). The academic load of teachers (in terms of contact hours for lectures, practical/laboratory work) seems to be adequate (SER, page 16, items 61 and 62).

According to SER (Table 4, page 10; Chap. 3 pages 15-19) the qualifications of academic staff teaching in the study programme satisfy the legal requirements of Lithuanian legislation, thus being adequate for ensuring learning outcomes. 77% of the curricula volume is taught by lecturers that have practical experience. All key lecturers who are teaching in this study programme have at least a Master's (or equivalent) degree (cf. SER Appendix 3) in the study field of the taught subject,

professional and teaching qualification, and the experience of practical activity in the field of the taught subject. The number of senior teaching staff (Assoc. Professor) is three, but in 2014/2015 only one Assoc. Professor was teaching full-time the core specialisation subjects. Positively, the number of full-time Assoc. Professors teaching the study programme core subjects increased to two for the academic year 2015/2016.

Disciplinary measures are taken by the senior administration to ensure sufficient quality (and further strengthening) of teaching. For instance the work contract of a newly employed teacher was terminated after a year due to inappropriate work quality (SER, page 15). Two similar cases (occurring in recent years in the college) were reported to the review team during the visit. This evidences that monitoring of this very crucial aspect of the study programme is proceeded strictly. However, it is recommended to introduce an additional peer guidance system for beginning teachers for acquiring proper teaching methodology and advice from more experienced colleagues. This would reduce (or even prevent) such post-factum disciplinary measures.

The college has created good conditions for the professional development of the teaching staff. This is necessary for maintaining quality of the study programme. An analysis of the teachers' qualification improvement in the period 2011-2015 (SER Annex 3) demonstrates that most of the academic staff have participated in special qualification improvement courses, professional refresher courses, research apprenticeships in other universities or research institutions, specialized educational seminars etc. There is a good participation in internships and exchange with foreign partners. For instance within 2010-2015 eleven study programme teachers (SER Annex 2) visited or participated in traineeships in foreign HEI-s e.g. in Latvia, Poland, Turkey, Spain, Finland, Estonia, Belgium, Hungary, Germany (altogether 23 visits, SER Table 10). Also the study programme teachers attend domestic and international conferences, with altogether 101 presentations for the past 5 years period (SER Table 12, page 17). The staff members publish academic papers, participate in various academic projects and consulting activities. The publication activities of the teaching staff are considerable. Teachers of the study programme have published 197 scientific and popular articles during the last five years (2011-2015). This obviously includes also publications of part-time teachers, whose primary teaching position is in other Lithuanian HEI's. Some teachers of the programme are involved in (contractual) applied research, the topics of those are directly related to the study programme.

Teachers of the department take active part in public and professional social activities. All of them are members of Lithuanian Association of Land Management and Hydraulic Engineers (hereafter - LALMHE). One teacher of the study programme is the president of LALMHE, another teacher is

the chairman of LALMHE's Land Management section. Some other teachers are members of various national professional and administrative bodies. Five study programme teachers are members of the college Academic Council (SER, page 19). Thus, the study programme interests are well presented in these important professional and academic bodies.

The department should continue systematic improvement of teacher's qualifications by taking part in research and development, seminars and conferences and in continuing education. In order to endorse internationalisation of the studies the study programme teachers need to improve their teaching proficiency in the English language. Publishing in peer reviewed international journals (especially those indexed in the Scopus and ISI WoS databases) is strongly encouraged.

2.4. Facilities and learning resources

The department of Real Estate Cadastre moved to new premises in 2011. An appropriate number of study rooms, computer classrooms and laboratories are available for the study programme. These are in conformity with health-protection, sanitary and safety requirements. The premises for studies are adequate both in their size and quality. Number of laboratories, training rooms and bases for practical training is appropriate for providing education and research according to the study programme curriculum. The laboratories with instrumental equipment are adequate. According to SER (page 20) due to renovations the overall situation has improved in the last few years.

There are also sufficient amount of specialized (and relevant to the study programme) software at the college (server licences): AutoCad (39 workplaces), AutoCad Civil 3D (24 workplaces), GeoMap (39 workplaces), ArcGIS (75 workplaces), Inventory (24 workplaces), Trimble Business Center Advanced EDU (10 licenses) etc. (SER, page 20). Considering the possible inclusion of additional remote sensing and spatial data modelling competence into the study programme then additional software may need to be purchased.

College has adequate arrangements for students' practices and practical assignments. The study programme curricula contains practices of geodesy 1 (9 ECTS), geodesy 2 (7 ECTS) and photogrammetry (2 ECTS). Practical surveying trainings at the college are performed using modern measurement equipment: electronic theodolite FET – 405 with tripod (8 units), optical levelling instruments Leica RUNNER 24 (10 units) and AT-B4 (4 units), electronic total stations: NIKON DTM (1 unit), Trimble M3 (1 unit); survey grade GPS receivers: TOPCON GPS (1 unit), receiver Hiper II RTK (1 unit.); GPS receivers without an external antenna: Mobil Mapper CE (1 unit), Magellan ProMark 3 (1 unit), eXplorist 500 (1 unit), eXplorist 210 (24 units), laser distance-measuring tools: Disto D2 (1 unit), Spectra precision QM75 (4 units) etc. (SER, page 21).

The aforementioned equipment is sufficient for laboratory studies and exercises. Also the college social partners are occasionally demonstrating capabilities of the most recent surveying equipment emerging in the market (such as drones). However, there was a remark during the interviews that during the Professional Practice of Geodesy 1 (when the students are divided into small workgroups for solving practical assignments) some surveying instruments had to be rotated between the workgroups. In some occasions students had to wait for the equipment, which was used by another workgroup. Thus it is advised to purchase additional basic surveying equipment to ensure delay-less work for each workgroup. Positively, such an intention is also acknowledged in the SER (page 22). The students conduct their Final Practise of Professional Activity (8 ECTS) at social partners of the college - land and cadastral surveying enterprises. Tripartite agreements are developed for Professional Activity Practice. During the last years students have found the practice places themselves, mostly nearby their original residence. During the final practise the students may also encounter rather sophisticated surveying equipment.

According to SER (page 21) students can use books, textbooks, methodical guidelines and other resource materials available in the library of college. Library funds are annually complemented with latest professional literature. The college extends access to international databases. An integral search system, which allows one to look up for information not only in the library of college but other Lithuanian libraries and subscribed databases as well, was installed in the college. Teachers and students can use library of Lithuanian Research Centre for Agriculture and Forestry Institute, which contains subscribed scientific databases. In addition, electronic information sources prepared for science and studies by the college teachers have been made available in the internal electronic storage system (SER, page 22).

2.5. Study process and students 'performance assessment

The admission requirements are described at college web site. Admission to the programme is realised according to the Rules of Admission to the First Cycle and Integrated Studies at Lithuanian HEI-s. 44 full-time and 27 part-time students were admitted in 2011. During the past five years the intake of students has decreased. In 2014 29 full-time and 27 part-time students were admitted, whereas in 2015 21 full-time and 19 part-time students were admitted. (SER page 23, table 17). In general the study programme was completed by 75 % of full-time students and 47 % of part-time students (SER page 25). The main drop-out reasons are low motivation to study and better opportunities elsewhere (SER page 23). 10% students terminate studies themselves, mostly for personal reasons. 13% of the first year students are expelled due to poor academic performance - not all students are sufficiently prepared to study exact sciences (SER page 27). Also, an analysis

showed that the largest number of expelled part-time students (30 persons) and full-time students (12 persons) is attributed to 2012/2013 academic year (SER page 24, table 18). More efforts should be made to reduce the number of the study programme dropouts.

The interviewed students were satisfied with study process and the study programme in general. Also, they are satisfied with coordination of practical work and possibilities to work and study at the same time, and perform final practice in the enterprise. They are satisfied about condition of laboratories, computer classes and variety of online study resources.

Students are occasionally participating in national conferences: 5 scientific papers were prepared and 3 oral presentations were delivered during the 2011-2015 period (SER page 26). Students (supervised by the programme teachers) participated in seven research projects during the 2011-2015 period. Still, the number of students involved in research is rather low.

Even though the students are informed about opportunity to study abroad, the number of Erasmus and Nordplus outgoing students is low (3 students during 2014/2015 and 2 students during 2015/2016). The college has an agreement with Scotland, Norway and Denmark HEI-s. During the 2014/2015 year period one student was participating ERASMUS programme in Norway, two students went to Denmark. Two students went to Scotland during the 2015/2016 academic year.

The department has hosted a few foreign students (item 117, SER page 25). According to an interviewed foreign student, he has good opportunities to study the study programme subjects in English. Also, he gets all the required support from the teachers. It is planned to attract more foreign students to the study programme in the future.

There is a good support for students from teachers, students union and college staff. Students are participating in improvement of their study programme and give a feedback to administration. Also, they can reach their teachers easily and be consulted about study issues. Especially part-time students were highly satisfied with teachers support and flexible class schedules.

The assessment of students' performance is clear and presented to students by teachers. Assessment is calculated according to the formula of accumulated score, which includes proportions of testing, provided in a description of a subject. However, one of the concerns (mentioned already in Section 2.1 of this report) is the quality of the final theses. The review team discovered deviations from the methodological requirements for final theses. Thus it is suggested to ensure that all the theses to be defended will correspond to the college's own requirements.

The Cadastral Measurements and Real Estate Valuation study programme is following provisions of Bologna process, i.e. the graduates (professional bachelor) can enter to the next educational level (MSc). However, a year long adjustment courses on specific subjects need to be taken first, in order to qualify for certain MSc programmes in Lithuanian universities. The interviewed graduates were aware of this requirement and thought it to be justified. Most commonly, the study programme graduates follow the non-academic career path, though. Those graduates that perform cadastral and land surveys can apply recognition (after fulfilling requirements for professional experience) for level 6 of the Lithuanian qualification framework. However, due to changed legislation those graduates working in the Real Estate Valuation might have difficulties for applying the level 6 qualification within this particular sub-field. Therefore some of the Real Estate Formation and Valuation specialisation graduates tend to work with the real estate formation issues only, whereas the majority of the study programme graduates execute the cadastral and land surveying tasks.

Graduates' employment rate is rather high; surveys have shown that 77 % of graduates were employed during the final years of their studies, whereas 55 % of students were working in relation to their profession (SER page 28). In general, 64 % full-time and 44 % part-time students have a job after graduation (SER page 28, table 24). Almost all part-time students are working and studying at the same time. Interviews with the stakeholders confirmed that the study programme graduates are well placed in the labour market. Graduates work in different companies, offices and organizations related to activity of cadastral measurements, geodesy, cartography, real estate valuation, territory-planning and other needs of the state. Main employers include: the State Enterprise "Centre of Registers", Joint Stock Company "Institute of Aerial Geodesy", State Enterprise "State Land Fund", National Land Service or its territorial departments as well as enterprises pursuing cadastral measurements of real property objects (SER page 9). Thus, professional skills of the majority of graduates appear to meet the stakeholders' expectations.

2.6. Programme management

Responsibilities for decisions and monitoring of the implementation of the study programme are clearly defined. Study programme administration acts by regulations which provide responsibility of every programme participant. The entire process of assuring study quality is coordinated by college group of quality management system supervision, which discusses relevant issues of quality improvement as well as provides recommendations for organizers and stakeholders of studies (SER page 29).

Programme management is performed in the departments by Study Programmes Committees. A committee consists of the study programme teachers, head of the department, representatives of Studijų kokybės vertinimo centras

employers and students. Teachers are responsible for conformity of studies considering developments within the sector of measurement engineering. Representatives of employers are responsible for study programme's conformity to labour market needs and adjustment of students' practical and general skills. Students' representative communicates students' expectations and ensures students' integration into study programme (SER, page 29).

According to SER information and feedback on the implementation of the programme are regularly collected (via questionnaires) and analysed. Surveys of students, graduates, employers and social partners are continuously performed for the improvement of the study programme. Programme teachers take active part in improvement of study programme by initiating inclusion of new subjects, change of their volume, sequence of study subjects etc (SER, page 30). Managers of perspective workplaces of the graduates participate in the process expressing their opinion and evaluating students' special and general abilities during the Final Professional Activity Practice (SER, page 30). The study programme evaluation and improvement are supported by the main stakeholders (departments of National Land Service under the Ministry of Agriculture, also private companies performing land surveying works). During defence of final works the qualification commission also comments the topics, quality and practical applicability of works. Notes are recorded and recommendations are formulated (cf. SER page 31, item 161). Still, some of the interviewed graduates and social partners indicated that their involvement in the evaluation and improvement of the study programme has not been fully utilised, yet. Thus there is some potential in enhancing and broadening the involvement of stakeholders to the study programme development and improvement.

The outcomes of internal quality assurance of the programme are used for the improvement of the programme. Questionnaires and also suggestions made by students, teachers, employers, social partners are analysed and generalized by the Study Programme Committee. Recommendations designed by the Study Programme Committee are analysed and approved by the college Academic Council. The internal quality assurance measures are effective and efficient. One of the evidences of the strictness of study programme monitoring (i.e. terminating work contract due to insufficient teaching quality) was given in section 2.3.

Concerning the evaluated study programme it is regrettable that the implications due to recent legislation changes affecting the Real Estate Formation and Valuation specialisation (unfortunately, this very important circumstance was not mentioned in the SER either) are not reflected in the current version of the study programme. Also none of the interviewed persons could explain what has been or can be done about.

III. RECOMMENDATIONS

1. Include modern remote sensing and spatial data modelling subjects into the new/next version of the curricula.
2. Re-assess amount of ECTS credits allocated for the Professional Practise of Geodesy 1 (currently 9 ECTS), possibly extending the duration of the Final Practice of Professional Activity.
3. Introduce regular pedagogical support system for new (and also more seasoned) teachers, to ensure necessary quality of the teaching.
4. Increase basic surveying equipment for the college based geodesy practises to ensure delay-less work for each student group.
5. Re-assess the status of the Real Estate Formation and Valuation specialisation, considering implications due to alterations in the national Real Estate Valuation legislation.
6. Improve the quality of the final theses by enforcing fulfilment of all requirements for theses compilation.
7. Increase the number full-time teachers of the core subjects with the college as their primary affiliation.
8. Enhance and broaden involvement of alumni and social partners into the evaluation and improvement of the study programme.
9. Improve systematically qualifications of the teaching staff by taking part in research and development, seminars and conferences and in continuing education (e.g. attending pedagogical courses). Publishing in peer reviewed journals should be encouraged.
10. Encourage more students to participate in the ERASMUS exchange programme and in applied research projects.
11. Motivate teachers to improve preparedness for incoming exchange students, e.g. by enhancing teaching proficiency in the English language.
12. Introduce measures for decreasing the number of dropouts, e.g. special study support programmes for the first year students.

IV. SUMMARY

The study programme aims at preparing specialists of cadastral measurements and real estate valuation, who would gain knowledge and skills on cadastral data of land parcels, buildings, engineering structures and forests as well as valuating real estate. Accordingly, the study programme comprises two specializations - Real Estate Cadastre and Real Estate Formation and Valuation. The objectives of the programme and the expected learning outcomes of the studies are partly consistent with the type and level of studies and the level of qualifications offered. The study programme graduates obtain educational precondition for applying level 6 of the Lithuanian qualification framework. Students, graduates as well as the employers are satisfied with the Real Estate Cadastre specialisation of the study programme. The aims and learning outcomes are matching with the needs of typical employers. However, regrettably implications due to legislation changes (in 2012) affecting the Real Estate Formation and Valuation specialisation are not reflected in the current version of the study programme. The unfortunate consequence of this is that the number of students interested in choosing the Real Estate Formation and Valuation speciality has dropped. Also the majority of the recent graduates with the Real Estate Formation and Valuation specialisation are mainly employed within the field of cadastral surveys. Thus it is recommended to reassess the present status of the specialisation, with a desirable result that the programme graduates would gain a better access to this particular segment (Real Estate Formation and Valuation) of labour market.

The curriculum design meets the general legal requirements. The study programme duration is 3 years for full-time and 4 years for part-time studies, respectively. Part-time studies are reasonably integrated with full-time studies. The full-time students were satisfied with the teaching, but some of them indicated a need for more practice. It is suggested re-assessing the organisation of the practise related disciplines, with possible re-allocation of related ECTS credits. Also it is essential to include subjects tackling contemporary remote sensing technologies and spatial data modelling approaches to the next version of the curricula.

The qualifications of academic staff teaching in the study programme satisfy the Lithuanian legal requirements. All key lecturers in this study programme have at least a Master's (or equivalent) degree and the experience of practical activity in the field of the taught subject. However, only for 1/3 of the study programme teachers the college is the primary workplace, whereas for the rest teachers the primary affiliation is elsewhere. This could become a problem due to limited accessibility of students to part-time teachers, but also an obstacle in furthering co-operation with other faculty members. Thus it is recommended to increase the number of full-time teachers (of core subjects) that the college would become their primary affiliation. Positively, the number of

full-time Assoc. Professors (that are teaching the study programme core subjects) increased to two for the academic year 2015/2016. The college has created good conditions for the professional development of the teaching staff. Most of the academic staff have participated in special qualification improvement courses, professional refresher courses, research apprenticeships in other universities or research institutions, specialized educational seminars etc. The programme teachers attend domestic and international conferences. The staff members publish academic papers, participate in various academic projects and consulting activities. Some teachers of the programme are involved in applied research, the topics of those are directly related to the study programme. The department should continue systematic improvement of teacher's qualifications by taking part in research and development, seminars and conferences and in continuing education. To ensure necessary quality of the teaching it is recommended to introduce a pedagogical support system for new (and also more seasoned) teachers. In order to endorse internationalisation of the studies the study programme teachers need to improve their teaching proficiency in the English language. Publishing in peer reviewed international journals is strongly encouraged.

The premises for studies are adequate in their size and quality. Number of study rooms, computer classrooms, laboratories and bases for practical training is appropriate for providing education and research. College has adequate arrangements for students' practices and practical assignments. The amount of surveying equipment is sufficient for laboratory studies and exercises. However, for the outdoor surveying practise it is advised to purchase additional basic surveying equipment to ensure delay-less work for each workgroup.

The study programme admission requirements are explained at college's web site. During the last five years the intake of students has decreased almost by half. Measures need to be taken to reduce drop-out rate during the first years of studies. The interviewed students were satisfied with study process and the study programme. Also, they are satisfied with coordination of practical work and possibilities to work and study at the same time, and perform final practice in the enterprise. Evidently, the relations between teachers and students are pleasant and resultative. Even though the students are informed about opportunity to study abroad, the number of Erasmus outgoing students is rather low. The assessment of students' performance is clear. However, the quality of the final theses is a concern. It is important to ensure that all the theses to be defended will correspond to the college's own requirements for theses compilation.

Study process and student assessment is well organized and feedback oriented. The responsibilities for decisions and monitoring of the implementation of the programme are clearly defined, information and data on the implementation of the programme are regularly collected and analysed; the outcomes of

internal evaluations of the programme are used for the improvement of the programme; the evaluation and improvement processes involve stakeholders; the internal quality assurance measures are effective and efficient. This is proved by enthusiastic attitude of the interviewed students and teachers. Still, the involvement of stakeholders to the study programme development/improvement can be broadened further. Also essential implications due to recent legislation changes to the study programme need to be considered more promptly. In particular the programme management needs to take immediate actions towards improving the status of the Real Estate Formation and Valuation speciality of the study programme.

V. GENERAL ASSESSMENT

The study programme *Cadastral Measurement and Real Estate Valuation* (state code – 653H14005) at Kaunas College of Forestry and Environmental Engineering 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	2
2.	Curriculum design	2
3.	Teaching staff	3
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	2
6.	Programme management	2
	Total:	14

*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. Bernd Teichert
Grupės nariai: Team members:	Prof. Dr. Artu Ellmann
	Assoc. Prof. Eloina Coll Aliaga
	Ms Vytautė Juodkienė
	Mr. Audrius Petkevičius
	Ms Neringa Vaičiūnaitė

**KAUNO MIŠKŲ APLINKOS IR INŽINERIJOS KOLEGIJOS
PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS *KADASTRINIAI MATAVIMAI IR
NEKILNOJAMOJO TURTO VERTINIMAS* (VALSTYBINIS KODAS – 653H14005)
2016-07-04 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-161 IŠRAŠAS**

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V. APIBENDRINAMASIS ĮVERTINIMAS

Kauno miškų ir aplinkos inžinerijos kolegijos studijų programa *Kadastriniai matavimai ir nekilnojamojo turto vertinimas* (valstybinis kodas – 653H14005) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	2
2.	Programos sandara	2
3.	Personalas	3
4.	Materialieji ištekliai	3
5.	Studijų eiga ir jos vertinimas	2
6.	Programos vadyba	2
	Iš viso:	14

* 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 programos tikslas – parengti kadastrinių matavimų ir nekilnojamojo turto vertinimo specialistus, turinčius žemės sklypų, pastatų, inžinerinių statinių ir miškų kadastrinių duomenų, taip pat nekilnojamojo turto vertinimo žinių ir įgūdžių. Studijų programa apima dvi specializacijas – nekilnojamojo turto kadastrą ir nekilnojamojo turto formavimą bei vertinimą. Programos tikslai ir numatomi studijų rezultatai iš dalies atitinka studijų tipą ir lygmenį, taip pat teikiamų kvalifikacijų lygį. Studijų programos absolventai gali pretenduoti į Lietuvos kvalifikacijų sąrangos 6 lygmenį. Studentai, absolventai ir darbdaviai yra patenkinti studijų programos nekilnojamojo turto kadastro specializacija. Tikslai ir studijų rezultatai atitinka tipiškus darbdavių poreikius. Vis dėlto gaila, kad dabartinėje studijų programos versijoje neatsispindi teisės aktų pakeitimų (padarytų 2012 m.) poveikis nekilnojamojo turto formavimo ir vertinimo specializacijai. Neigiama to pasekmė yra ta, kad studentų, besirenkančių nekilnojamojo turto formavimo ir vertinimo specialybę, skaičius

sumažėjo. Be to, didžioji dalis paskutinių nekilnojamojo turto formavimo ir vertinimo specializacijos absolventų daugiausia dirba kadastrinių matavimų srityje. Todėl rekomenduojama iš naujo įvertinti esamą specializacijos statusą, siekiant, kad programos absolventams būtų sudarytos galimybės lengviau patekti į šį konkretų darbo rinkos segmentą (nekilnojamojo turto formavimą ir vertinimą).

Programos sandara atitinka bendruosius teisinius reikalavimus. Studijų programos trukmė – 3 metai (nuolatinė forma) ir 4 metai (ištęstinė forma). Ištęstinės studijos pakankamai gerai integruotos į nuolatinės. Nuolatinė studijų formos studentai teigė esantys patenkinti dėstymu, tačiau kai kurie nurodė didesnę praktikos poreikį. Siūloma iš naujo įvertinti su praktika susijusių disciplinų organizavimą ir galbūt perskirstyti skiriamų ECTS kreditų kiekį. Taip pat į kitą studijų programos versiją būtina įtraukti dalykus, apimančius šiuolaikinių nuotolinio stebėjimo technologijų ir erdviųjų duomenų modeliavimo metodus.

Studijų programos dėstytojų kvalifikacija atitinka Lietuvos teisinius reikalavimus. Visi pagrindiniai šios programos dėstytojai turi mažiausiai magistro (arba lygiavertį) laipsnį ir praktinės dėstomo dalyko srities veiklos patirties. Tačiau tik trečdaliui studijų programos dėstytojų kolegija yra pagrindinė darbovietė, o kitiems tai yra ne pagrindinis darbas. Tai galėtų tapti problema dėl ribotų studentų ir neetatinių dėstytojų bendravimo galimybių ir trukdyti plėtoti bendradarbiavimą su kitais fakulteto nariais. Todėl rekomenduojama didinti etatinių (pagrindinių dalykų) dėstytojų, kuriems kolegija būtų pagrindinė darbovietė, skaičių. Sveikintina, kad 2015–2016 studijų metais etatinių docentų (dėstančių pagrindinius studijų programos dalykus) skaičius išaugo iki dviejų. Kolegija sukūrė geras sąlygas profesiniam dėstytojų tobulėjimui. Didžioji dalis dėstytojų dalyvavo specialiuose kvalifikacijos kėlimo kursuose, profesinio tobulinimosi kursuose, tyrimų praktikose kituose universitetuose ar tyrimų institucijose, specializuotuose mokomuosiuose seminaruose ir pan. Studijų programos dėstytojai dalyvauja vietos ir tarptautinėse konferencijose. Darbuotojai skelbia mokslinius darbus, dalyvauja įvairiuose moksliniuose projektuose ir konsultacinėje veikloje. Kai kurie dėstytojai vykdo taikomuosius tyrimus, kurių temos yra tiesiogiai susijusios su studijų programa. Katedra turėtų ir toliau sistemingai kelti dėstytojų kvalifikaciją, dalyvaujant tyrimų ir plėtros veiklose, seminaruose ir konferencijose, taip pat tęstiniame mokyme. Siekiant užtikrinti tinkamą dėstymo kokybę, rekomenduojama įdiegti pedagoginės paramos sistemą naujiems (ir net labiau patyrusiems) dėstytojams. Siekiant palaikyti studijų tarptautiškumą, studijų programos dėstytojams reikėtų kelti savo anglų kalbos mokėjimo lygį. Taip pat labai skatintinas darbų skelbimas recenzuojamuose tarptautiniuose žurnaluose.

Studijoms skirtos patalpos yra tinkamo dydžio ir kokybės. Kabinetų, kompiuterių klasių, laboratorijų ir praktinio mokymo bazių skaičius pakankamas švietimo ir tiriamajai veiklai vykdyti. Kolegija turi atitinkamas priemones studentų praktikai ir praktinėms užduotims atlikti. Topografinių matavimų įrangos kiekis pakankamas laboratoriniams mokymams ir pratyboms. Tačiau kalbant apie topografinių matavimų lauko praktiką, rekomenduojama įsigyti papildomos pagrindinės topografinių matavimų įrangos, kad darbo grupėms nereikėtų laukti, kol atsilaisvins įranga.

Priėmimo į studijų programą reikalavimai aiškiai pateikti kolegijos interneto svetainėje. Per paskutinius penkerius metus priimtų studentų skaičius sumažėjo beveik per pusę. Reikėtų imtis priemonių, mažinančių studentų nubyreėjimo pirmaisiais studijų metais rodiklį. Apklausti studentai teigė esantys patenkinti studijų eiga ir pačia studijų programa. Taip pat jie patenkinti praktinio darbo koordinavimu ir galimybėmis dirbti ir studijuoti tuo pačiu metu, taip pat atlikti baigiamąją praktiką įmonėje. Akivaizdu, kad dėstytojų ir studentų santykiai malonūs ir produktyvūs. Nors studentai informuoti apie galimybę studijuoti užsienyje, studentų, išvykstančių studijuoti pagal „Erasmus“ mainų programą, skaičius yra gana žemas. Studentų pasiekimų vertinimas aiškus. Tačiau baigiamųjų darbų kokybė kelia nerimą. Būtina užtikrinti, kad visi baigiamieji darbai, kurie bus ginami, atitiktų kolegijos keliamus baigiamųjų darbų rengimo reikalavimus.

Studijų eiga ir jos vertinimas gerai organizuojami ir orientuoti į grįžtamąjį ryšį. Atsakomybė už sprendimų priėmimą ir programos įgyvendinimo stebėseną aiškiai apibrėžta; informacija ir duomenys apie programos įgyvendinimą reguliariai renkami ir analizuojami; vidinio programos vertinimo rezultatai naudojami programai tobulinti; į vertinimo ir tobulinimo procesus įtraukiami socialiniai dalininkai; vidinio kokybės užtikrinimo priemonės veiksmingos ir efektyvios. Tai akivaizdu iš entuziastingo apklaustų studentų ir dėstytojų požiūrio. Tačiau dar galima stiprinti ir plėsti socialinių dalininkų dalyvavimą plėtojant ir tobulinant studijų programą. Be to, reikėtų skubiau apsvarstyti esminį naujausių teisės aktų pakeitimų poveikį studijų programai. Ypač programos vadovybė turi nedelsdama imtis veiksmų, kad pagerintų studijų programos nekilnojamojo turto formavimo ir vertinimo specialybės prestižą.

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III. REKOMENDACIJOS

1. Į naują / atnaujintą studijų programą įtraukti šiuolaikinių nuotolinio stebėjimo technologijų ir erdvinį duomenų modeliavimo dalykus.
2. Iš naujo įvertinti už Geodezijos profesinę praktiką 1 skiriamų ECTS kreditų skaičių (dabar suteikiami 9 ECTS kreditai) ir galbūt pailginti Baigiamosios profesinės veiklos praktikos trukmę.

3. Įdiegti reguliarios pedagoginės paramos sistemą naujiems (ir net labiau patyrusiems) dėstytojams, siekiant užtikrinti tinkamą dėstyto kokybę.
4. Padidinti pagrindinės topografinių matavimų įrangos kiekį kolegijoje atliekamai geodezijos praktikai, kad studentų grupėms nereikėtų laukti, kol atsilaisvins įranga.
5. Iš naujo įvertinti nekilnojamojo turto formavimo ir vertinimo specializacijos statusą, atsižvelgiant į šalies nekilnojamojo turto vertinimo teisės aktų pakeitimus.
6. Gerinti baigiamųjų darbų kokybę, užtikrinant, kad jie atitiktų visus baigiamųjų darbų rengimo reikalavimus.
7. Didinti pagrindinių dalykų etatinių dėstytojų, kuriems kolegija būtų pagrindinė darbovietė, skaičių.
8. Stiprinti ir plėsti alumnų ir socialinių partnerių dalyvavimą vertinant ir tobulinant studijų programą.
9. Sistemingai kelti dėstytojų kvalifikaciją, jiems dalyvaujant tyrimų ir plėtros veikloje, seminaruose ir konferencijose bei tęstiniame mokyme (pvz., lankant pedagogikos kursus). Taip pat skatinti darbų skelbimą recenzuojamuose žurnaluose.
10. Skatinti daugiau studentų dalyvauti ERASMUS mainų programoje ir taikomųjų tyrimų projektuose.
11. Motyvuoti dėstytojus gerinti savo pasirengimą priimti atvykstančius mainų programos studentus, pvz., kelti anglų kalbos mokėjimo lygį.
12. Įdiegti priemones, mažinančias studentų nubyreėjimo rodiklį, pvz., specialias studijų paramos programas pirmakursiams.

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