



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Vilniaus Gedimino technikos universiteto

STUDIJŲ PROGRAMOS

STATYBOS TECHNOLOGIJOS IR VALDYMAS (621J80003)

VERTINIMO IŠVADOS

EVALUATION REPORT

***OF CONSTRUCTION TECHNOLOGIES AND MANAGEMENT
(621J80003)***

STUDY PROGRAMME

at Vilnius Gedinimas technical University

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Išvados parengtos anglų kalba
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Vilnius
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Statybos technologijos ir valdymas</i>
Valstybinis kodas	621J80003
Studijų sritis	Technologiniai mokslai
Studijų kryptis	Statybų technologijos
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antra
Studijų forma (trukmė metais)	Nuolatinė (2), iššęstinė (2,5)
Studijų programos apimtis kreditais	120
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Statybų technologijų magistro laipsnis
Studijų programos įregistravimo data	1997-05-21

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Construction Technologies and Management</i>
State code	621J80003
Study area	Technological sciences
Study field	Construction technologies
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full time (2), Part time (2,5)
Volume of the study programme in credits	120
Degree and (or) professional qualifications awarded	Master of Building Technology
Date of registration of the study programme	May 21 st , 1997

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I. INTRODUCTION

1.1. Background of the evaluation process

The evaluation of on-going study programmes is based on the **Methodology for evaluation of Higher Education study programmes**, approved by Order No 1-01-162 of 20 December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter – SKVC).

The evaluation is intended to help higher education institutions to constantly improve their study programmes and to inform the public about the quality of studies.

The evaluation process consists of the main following stages: *1) self-evaluation and self-evaluation report prepared by Higher Education Institution (hereafter – HEI); 2) visit of the review team at the higher education institution; 3) production of the evaluation report by the review team and its publication; 4) follow-up activities.*

On the basis of external evaluation report of the study programme SKVC takes a decision to accredit study programme either for 6 years or for 3 years. If the programme evaluation is negative such a programme is not accredited.

The programme is **accredited for 6 years** if all evaluation areas are evaluated as “very good” (4 points) or “good” (3 points).

The programme is **accredited for 3 years** if none of the areas was evaluated as “unsatisfactory” (1 point) and at least one evaluation area was evaluated as “satisfactory” (2 points).

The programme **is not accredited** if at least one of evaluation areas was evaluated as "unsatisfactory" (1 point).

1.2. General

The Application documentation submitted by the HEI follows the outline recommended by the SKVC. Along with the self-evaluation report and annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	Examples of student questionnaires
2.	Timetable of students
3.	Department action plans
4.	List of incoming/visiting teachers

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

This report presents the findings of an evaluation of the master programme Statybos technologijos ir valdymas (621J80003). This two year full-time (3 years part-time) programme leads to a Master of Construction Technologies and Management qualification.

This report is based on an analysis of the document “Study Field of Construction Technologies. Study Programme Construction Technology and Management (621J80003). Self-Assessment Report, Vilnius, 2016” (consisting of 39 pages main text, excluding annexes) and information gathered by the Review Team during a site visit to Vilnius Gediminas Technical University on 15 November 2016.

The site visit included:

- discussions with senior faculty administration staff,
- discussions with staff responsible for preparation of Self-Evaluation Reports (SER),
- discussions with teaching staff,
- discussions with students,
- discussions with employers of graduates and alumni,
- inspection of student coursework including final year projects,
- inspection of teaching premises and equipment including auditoria, library, computing facilities and laboratories.

The Review Team found it necessary to get clarification of some issues reported in the SER and was satisfied with the clarifications provided during the site visit.

It is worth mentioning that the same Review Team also evaluated the bachelor of Construction Technologies and Management (612J80003), the bachelor of Urban Engineering (612H27001), the masters of Urban Planning and Engineering (621H27001), Road Safety Engineering (621H22001) and Civil engineering (621H20002). Many common aspects were present in these programmes. Therefore, the corresponding evaluation reports may contain some duplicate comments due to identical data, situation or concerns in order to be read independently.

The review was conducted in accordance with current regulations and guidance furnished to the Review Group through documentation and training by SKVC. The Review Group was also expertly assisted by Mr. Pranas Stankus in discharging its responsibilities to SKVC.

1.4. The Review Team

The review team was completed according *Description of experts' recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on 15/11/2016.

- 1. Prof. Philippe Bouillard (team leader)** Head of the BATir (Civil, Architectural and Urban Engineering) department at Université Libre de Bruxelles, (Belgium);
- 2. Prof. Alfred Strauss**, Head of the Institute of Structural Engineering at University of Natural Resources and Life Sciences (Austria);
- 3. Prof. Tõnu Meidla**, Head of Department of Geology at Faculty of Science and Technology in University of Tartu (Estonia);
- 4. Prof. Juan Martinez**, Professor of Civil Engineering at (Institut National des Sciences Appliquées (INSA) of Rennes (France);
- 5. Dr. Mindaugas Gikys**, Director of joint stock company AIF (Lithuania);
- 6. Mr. Simonas Bulota**, PhD Student in Material Science at Kaunas University of Technology (Lithuania).

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

Based on both visit information and available documentation, it can be confirmed that the master programme in Construction Technology and Management trains highly qualified technology science professionals. Based on interviews with successful candidates, it can be confirmed that all skills further listed as part of the self-evaluation report are positively attained. Further, the Review Team herewith confirms that the programme aims are well defined, clear and publicly accessible.

A detailed explanation of the intended learning outcomes of the programme can be found in the self-evaluation report documents and in the website, together with a description of the skills that the students will need to be able to demonstrate in order to successfully absolve the programme in terms of specific knowledge and in-depth understanding, research proficiencies. The main aims of the related programmes will thereby be reached. Aims and learning outcomes were last upgraded in 2016 in an effort to synchronise and optimise master programmes according to study fields at VGTU and to integrate latest trends and experiences of leading European universities. Though this effort is valuable and appreciated, the Review Team notices that the learning outcomes are not playing a central role in the study process yet. The statement that “the programme aims and learning outcomes are based on the academic and/or professional requirements, public needs and the needs of the labour market” is applicable to a considerable extent, as analysed hereafter.

However, both definition and understanding of the learning outcomes seem to be subject to different interpretations and opinions, in particular among members of the interviewed groups. In order to integrate and harmonise the different perspectives and also to introduce and continuously develop a transparent communication system for the content of the learning outcomes, the Review Team recommends gathering a working group dedicated to the continuous upgrading of the intended learning outcomes.

Aims and intended learning outcomes of the programme are currently made available to the public via the VGTU web site and also through AIKOS, the information system of the Ministry of Education and Science of the Republic of Lithuania. However, interviews with alumni of the programme and also with industrial partners revealed that general knowledge of the content is

limited. The Review Team suggests to explore further communication possibilities, perhaps even via advertising channels.

It was also concluded in the course of the assessment process that both aims and intended learning outcomes of the study programme are compatible with the corresponding University curriculum in several respects: (a) The aims of the study programme are consistent with the second-cycle degree of studies, and (b) the complexity level of the intended learning outcomes corresponds to the qualification requirements established in the National Qualifications System for level VII.

The study plan “Construction Technology and Management” and the interviews with the invited parties formed the basis for the conclusion that graduates with a specialisation focus have positively acquired advanced knowledge which enables them to develop scientific ideas, theories, methods and technologies. The statement above is also valid for the study plan “Construction Economics and Business Specialization”.

The programme is consistent and relevant for both academic and public requirements as well as the prerequisites of the labour market. It corresponds with international standards. However, there is room for improvement in the communication and presentation of the learning outcomes designed by the developer of the programme. The LO are considered as a top down approach taken from standard formulation tables.

The Review Team highly recommends formulating the learning outcomes as a bottom-up approach where teaching and learning objectives are clearly identified. All content should be transparent and easy to find and recognise. It should be presented in a form that is accessible to members of academia and the interested public as well as representatives of the labour market.

From both the programme report and the discussion with the involved parties, it can also be deduced that the social skills might be better targeted by the course descriptors to the programme.

2.2. Curriculum design

The Review Team confirms that second-cycle University programmes with a similar profile are currently carried out in prestigious universities in the UK (e.g. City University London, GCU London, Coventry University and Loughborough University) and the US (e.g. Philadelphia University, Polytechnic Institute of NYU, Westchester and Brigham Young University).

A detailed analysis of the self-evaluation report also shows that the study programme “Construction Technology and Management” is well balanced and designed for an efficient training of highly skilled construction technology and management professionals, due to the above indicated specifics of the study programme (i.e. sustainability and coherence between course units reflecting the real needs of the market). The exceptionally high competence and qualifications of the teaching staff safeguard the successful implementation of the well-designed programme.

The structure of the programme as presented clearly shows that the curriculum design meets the current legal requirements. This material also demonstrates that study subjects and/or modules are well balanced and not repetitive. Regarding the volume of students’ individual study load and class work, the learning outcomes meet the requirement of the major legal acts in Lithuania and VGTU. The interviews that were performed as part of the evaluation process also allow the conclusion that the performed upgrades were done based on the experience of relevant European universities in combination with feedback by both social partners and students. The current (upgraded) curriculum is certainly more integrated and synchronised. The study programme is oriented well in both practical and academic respects.

In-depth consideration of the relevant documents also led to the assessment that the volume of the master programme equals 120 ECTS credits and meets the volume of the ECTS credits required by legal acts (90–120). The duration of the master programme is planned with 2 years of full-time studies or 2.5 years of part-time studies. The volume of study subjects in ECTS credits is determined in relation to the complexity of the conceived learning outcomes. The volume of subjects during the first three semesters is balanced. In the construction technologies study field programme, 78 ECTS credits are devoted to subjects in the construction technologies and 30 ECTS credits are dedicated to preparing a final thesis. This is evaluated as very positive.

The documentation stated that no more than two course project works are scheduled per semester. The course works are considered as an integral part of a study subject. It was not possible to confirm this in practice.

According to the documents, part-time learning studies are scheduled as follows. Each year of study has two semesters. 80 contact hours are offered in each semester (40 hours of introduction lectures and 40 hours for consultations provided in classes). This was partly confirmed in the student interviews. It might be beneficial to communicate these details more transparently in the study plan and in the process documentation. The fact that lectures and consultations are provided on Saturdays are seen as very positive with regard to the offered commitment.

Regarding the part-time learning students' assessment (exams, course papers, etc.) as performed at the University, the question was raised of how the “part-time learning studies programme according to the number of subject modules, their volume, examinations, course projects and papers is identical to the full-time study programmes.” How these two processes can be coordinated, particularly between the teaching staff and students, needs to be described more transparently in the process documentation.

The effective central coordination of the part-time learning studies and its organisation in a combined form with the full time has still not been made available to the evaluators. The Self-Evaluation Report informs that the part-time learning studies are organised in a combined form where lectures, group work and discussions take place simultaneously in the presence of a teacher or through audio and video conferencing, e-mail, e-chat tools, but the student's individual learning is in asynchronous manner, providing students with material for individual work and individual tasks (e-books, computer learning systems, etc.) but this could not be confirmed.

The programme is generally comprehensive. It includes subjects that are relevant, helpful and appropriate to their specific area of construction management.

Students are insufficiently encouraged to attend lectures in English. Although the participation of guest lecturers was mentioned in the report provided by the Department, the assessment team did not gain evidence that these lectures represent an integral part of regular studies. Including compulsory elements, lectures and courses in English language could be the first steps towards ‘internationalisation at home’ and might also further encourage the students to accept the

proposals for international mobility. Wider application of English language in teaching could be implemented, inter alia, by introducing student paper summaries in English and by developing course material in English. Today, the Review Team observed insufficient attention to the development of professional English and this is considered a weakness of the programme.

Considering the large proportion of students combining their studies with a job, the Review Panel recommends making full usage of ECTS opportunities in terms of crediting work experience or club association projects.

2.3. Teaching staff

There is convincing evidence that the staff is adequate for maintaining the programme and their qualifications are meeting the legal requirements. The profiles of the staff members are clearly related to the subjects taught within the curriculum. The fact that several staff members are regularly applying for the professional licences is confirming their adequate professional qualification. Involvement of practitioners and people who are professionally active outside the VGTU is indicative of availability of practical experience among the teaching staff.

Sufficient evidence was provided in the documentation and during the meetings that the staff members are committed and capable of ensuring the learning outcomes. The staff members have demonstrated that there is some awareness on the learning outcomes, however, it was insufficiently demonstrated that the staff members are readily and systematically using learning outcomes for the programme development.

The number of involved staff members is high, , 27 people are listed. As the number of taught courses per semester is kept under control, the number of teaching staff is adequate to ensure learning outcomes. A remarkably fast increase of the number of part-time contracts could be noted over the last five years. The leadership of involved departments explains this with the industrial involvement of the members of teaching staff and stresses the value of such part-time industry positions as an additional quality measure. However, wide involvement of the staff members in industry was not confirmed during the site visit.

The staff involved in teaching is relatively young (average age 48 years). The age structure of the staff is clearly indicative of sustainability of the programme. The fact that the departments

involved in teaching are listed among the strongest in VGTU is noteworthy and is further ensuring the quality of teaching.

Although the staff/student ratio has been continuously increasing over the last five years (from 0.22 to 0.38), some of the members of teaching staff are still too heavily loaded, because of uneven teaching load. The teaching load, considering all programmes and levels, is higher than 50% of working time in 7 full-time staff members and is occasionally reaching 84%.

The available evidence shows that staff turnover is reported to be small and all members of teaching staff have eight or more years of pedagogical experience. Although the staff members reported very strict faculty appraisal procedures, this is not fully confirmed by the information the Review Team could collect from the self-evaluation report and public information sources (Thomson Reuters Web of Knowledge). This is emphasising the importance hiring new qualified staff with research capacity and industrial experience. Competitiveness of the overall salary level of staff members requires however further attention.

The professional development of staff members is supported by international mobility, mainly within the Erasmus+ Programme, and domestic training. The staff members have to improve their teaching skills on a regular basis taking a few hours of lectures every year, in order to ensure and support the development of new teaching methods. It should also be noted that the development measures are insufficiently supporting active use of learning outcomes as a programme development method.

According to VGTU Description of Teaching Staff Internships, each employee has to spend at least one month in an industrial company during the five-year tenure period. This internship is usually domestic. According to the data provided by the institution, only 12 members of teaching staff passed this internship over the five-year period. Considering the long pedagogical experience of the majority of staff members, the number of internships should have been remarkably higher during this period if the regulations were strictly followed. The situation may be partly influenced by the fact that several people are already involved in industrial companies. The value of such internship may be questioned in such cases and the strict regulations of internship might be reconsidered.

The VGTU is actively involved in the Erasmus+ activities and received visiting lecturers from several countries. At the same time, the exchange is rather 'asymmetrical' and only a limited number of foreign specialists are coming to VGTU, compared to the figures of outgoing mobility. Increasing staff/student ratio is likely positive from the point of view of professional development of the staff and could potentially facilitate the mobility programme..

The department is regularly organising international conferences. Majority of staff members are involved in various professional societies in Lithuania and abroad.

In general, the staff members reported about much too limited time for research and this is also evident from their publication record. Although there are examples of very good or even exceptional research performance and publication among staff members, this is unfortunately associated with reduced teaching load of these people. The research activity should be actively promoted among staff members and sufficient time should be allocated for research. It is noteworthy that the number of large international scientific and education projects in the departments involved in teaching shows a sharp decreasing trend. The R&D budget is relatively low. It is also noteworthy that the awareness of students about the research profiles and projects of the staff members seems to be very low. All these aspects should be seriously considered, the overall research activity in the department, as well as awareness and involvement of students require full attention. The publication in leading non-domestic international journals needs to be further promoted and stimulated.

As a summary, the high competence and qualifications of teaching staff are generally assuring successful implementation of the programme but the staff potential could be further enhanced.

2.4. Facilities and learning resources

VGTU makes auditorium rooms, dedicated laboratories, reading rooms within the library and specialised databases and software available to the students. In this programme, classes are organised not earlier than 4:20PM when they are many auditorium rooms available, some recently renovated. Modern and operational multimedia equipment, including internet connection, is available in the rooms, sometimes sponsored by social partners. Health and safety conditions of auditorium rooms are complying with the regulations. The students have the opportunity to work in the main computer room with 20 workplaces. 3 additional computer

rooms are available as well. The Review Team considers that the premises are very good and suitable to deliver the programme.

The students are trained to perform experiments in the laboratories. The laboratory equipment and measurement instruments are relevant for the study process. The equipment is maintained operational and sometimes renewed. The safety conditions in laboratories should however be improved by clearly demarcating restricted areas where appropriate. A further attention should be given to training the students to health and safety issues in laboratories, beyond getting their signature on a standard form. Lab sessions should include assignments on risk analysis.

The students are trained to use specialised software as well. The list of software is very good for the study process. The programmes are up-to-date and useful for the construction market. A better attention should be given however on further implementing the BIM software and collaborative approach in the study programme.

The departments have established collaboration with the Lithuanian Real Estate Development Association, the Lithuanian Builders Association, the Lithuanian Association of Consulting Companies and other social partners. Internships are available within the companies to ensure the practical training of the students and the staff.

The Faculty of Civil Engineering organises periodically (every three years) research international conferences "Modern Building Materials, Structures and Techniques" where students have the possibilities to get in contact with the new knowledge and resources.

The departments have developed relevant collaboration with the social partners and are making effort to support the students in getting in contact with practical case-studies.

VGTU has a Central Library with 11 reading rooms and 330 working places. The Central library offers very flexible working time and access to databases, books, journals and other e-resources. The Central library is also providing printing, scanning, binding services.

Recent books and journals are available in English and Lithuanian both in the Central library and reading rooms. There are also some specialised books in Lithuanian published by VGTU which also edit their own scientific journals.

The teachers are using handouts, slide presentations, videos, special equipment and software. The teachers and students are using the learning management system Moodle. The Review Panel appreciates the large use of Moodle but recommends considering further its possibilities and other internet tools, beyond the basic information transfer. The number of resources available in Lithuanian and English are suitable for the study process.

2.5. Study process and students' performance assessment

The admission to the Construction Technology and Management master programme is open to students holding a bachelor degree in Civil Engineering or Construction Technologies. Other bachelor graduates may apply if they are reaching requirements for general and special subjects. There is no entrance exam and all applicants are rated by weighting bachelor degree final grade, subject exams marks and research papers. Admission is organised by the Student Admission and Information Centre of University.

Considering the number of applications from 2011 to 2015, there is a significant decrease of interest for the full-time study programme, from 458 applicants to 254 applicants, whereas the number of applicants who chose this study programme as first priority remains stable. This shows that the study programme is attractive for highly motivated students. The average competition score stayed at the same level (average is from 10,30 to 10,54) for full-time and part-time study programmes.

The programme is available for full-time studies and until 2013 was also available for part-time studies. Full time students must choose their study specialisation between two options: Construction Technology and Management or Construction Economics and Business. The schedule for both classes and examinations is rational. Classes start in the afternoon since most of the students are already employed. Drop-out rates for full-time students are stable and very low showing outstanding retention rates from 85% to 100% in the analysed period.

Students have the opportunity to participate in Young Scientist Conference "Science – Future of Lithuania" which is hosted by VGTU. Participation in conference is popular among students – 19 students participate in such conference in 2016. This number is considerably higher than in BA programme. The final thesis average mark prepared by full-time students is high, over 9.

Student mobility is encouraged by VGTU International Relations Office. From 2010 to 2015 only 7 students went abroad by Erasmus+ mobility programme. Students claimed that they are getting regular information about Erasmus mobility from University administration, but lack of time and concerns losing their position in company are the main reasons why Erasmus mobility figures remain so low. The Review Panel however noticed a very large consensus of the need and relevance of international exchanges and recommends urgently analysing the current barriers, proposing and implementing appropriate solutions.

The students have good access to several sports, health and cultural facilities. There is an active VGTU Students Association which organises various events and activities and represents the students inside and outside of university. Accommodation is provided to non-resident students. VGTU Carriers and Integration Office provides individual and group consultations for students about career opportunities, including during Career days. Multiple scholarships are available for students based on study, merit or social circumstances. Student loans are subsidised by state.

The assessment system is based on a 10 points grading system. It is very clear and publicly available. It could be improved by elucidating the grade significance consistently with the learning outcomes. Students can receive informal feedback about their grades and an appeal procedure is available. In order to encourage Erasmus mobility, the University defined a clear relationship between ECTS and University grading systems. The final grade is a weighted result of exam, course project, course work, integrated project, report and final project marks.

The average percentage of graduates in who get an employment is very good and reaches 84%; however this number represents first and second cycles together. Exceptionally good professional activities of the majority of graduates are mentioned by social partners.

2.6. Programme management

The master in Construction Technology and Management is supervised by VGTU Department of Construction Technology and Management and Department of Construction Economics and Property Management (Faculty of Civil Engineering). The programme is managed by a study programme committee where each department is represented together with student and social partner representatives. Further approval by Faculty study committee, Faculty and University Council is required for the changes to be implemented, which is usual.

VGTU has implemented an information system “Alma Informatika” to collect all data related to the study programmes, but there is still a need to further develop the database to include information from graduates (first employment, surveys) and social partners.

Since 2007, an automated student surveying system has been successfully operating in the university information system. Two student surveys on the course units are organised annually: after each term (winter and spring) exam sessions. The survey results reveal the students have a very high level of satisfaction about the courses and teachers. However, the low rate of responses requires further actions to foster student participation.

The internal quality assurance system of the university is based on European Standards and Guidelines for Quality Assurance in Higher Education. VGTU has implemented consistent procedures regarding programme management, students’ assessment, staff training, study resources, career services, and students’ participation. The Review Team is acknowledging such procedures and encourages VGTU to continuously improve their implementation and quality.

The main responsibility for the programme quality assurance belongs to the study programme committee and the faculty study committee. The Review Team acknowledges that internal quality measures have been implemented but their effectiveness should be better substantiated by evidence in the self-evaluation report.

The master in Construction Technology and Management has been accredited by SKVC for 6 years in 2009. The Review Panel confirms that the recommendations have been properly analysed and that many improvements have been implemented. The quality assurance loop, from self-analysis and systematic data collection to implementing a plan of actions, should be strengthened. The Review Panel recommends further to systematically collect information and data on the programme and review it periodically by focusing more on feedback and developing and implementing a coherent plan of actions. Finally, a better attention should be paid to communicating the changes to the stakeholders, particularly if they have been surveyed.

III. RECOMMENDATIONS

1. Whereas the learning outcomes are available, the Review Panel noticed that they are not yet playing a central role in the study process and recommends developing a systematic formal way to periodically reviewing them involving all the stakeholders (students, graduates, social partners and teaching staff).
2. In this regard, the Review Panel recommends developing training and workshops for the Teaching staff in order to enhance the coherence between learning outcomes, methods and assessment.
3. The Review Panel appreciated the large use of the learning management system Moodle but recommends considering further its possibilities and other internet tools, beyond the basic information transfer.
4. In terms of internationalisation, the Review Panel noticed a very large consensus of the need and relevance of international students' exchanges offered by the Erasmus+ programme but their number remains low. It is recommended to urgently analyse the current barriers, propose and implement appropriate solutions.
5. In this regard, the Review Panel would like to repeat the recommendation from previous evaluation to improve the students' level in English language by offering courses, learning activities, study material and assigning coursework in English.
6. Regarding the decreasing number of students, the Review Panel recommends to intensify the efforts to increase the visibility of the programme involving all the stakeholders.
7. Considering the large proportion of students combining their studies with a job, the Review Panel recommends making full usage of ECTS opportunities in terms of crediting work experience or club association projects.
8. In terms of research, the Review Panel values the very good performances of some Faculty members but recommends better engaging them all together with the students in research, in including active participation in national and international contracts.
9. In terms of quality assurance, the Review Panel recommends to systematically collect information and data on the programme and review it periodically.

IV. SUMMARY

This two year full-time (three year part-time) programme leading to a Master of Construction Technologies and Management is consistent with the aims and learning outcomes and with the type and level of studies and the level of offered qualifications. The curriculum design meets the legal requirements and the study subjects and/or modules are spread evenly. The content of the modules is generally appropriate for the intended learning outcomes. The staff is well qualified to deliver the programme and staff –student ratio is exceptionally good. The staff is properly engaged in research, professional bodies and self-continuous development, though not always evenly. The facilities in terms of classrooms, libraries, reading rooms, computer rooms are very appropriate. The study process and student assessment are generally adequate. The Master in Construction Technology and Management is supervised by VGTU Department of Construction Technology and Management and Department of Construction Economics and Property Management (Faculty of Civil Engineering). It is managed properly by a study programme committee and the quality assurance is in place.

However, the Review Team has identified possible improvements. A better attention should be given to the implementation and review of the learning outcomes by fostering a collaborative approach with all stakeholders and offering appropriate training for the staff. The internationalisation should be extended, starting by offering learning opportunities to improve the English level of the students, fostering Erasmus exchange and enlarge the staff involvement in international projects. Further actions should be taken to involve the students into research and projects as well. The quality assurance loop, from self-analysis and systematic data collection to implementing a plan of actions, should be strengthened.

V. GENERAL ASSESSMENT

The study programme *Construction Technologies and Management* (state code – 621J80003) at Vilnius Gediminas Technical University is given positive evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	4
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	20

*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. Philippe Bouillard (team leader)

Grupės nariai:
Team members:

Prof. Alfred Strauss

Prof. Tõnu Meidla

Prof. Juan Martinez

Dr. Mindaugas Gikys

Mr. Simonas Bulota

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V. APIBENDRINAMASIS ĮVERTINIMAS

Vilniaus Gedimino technikos universiteto studijų programa *statybos technologijos ir valdymas* (valstybinis kodas – 621J80003) vertinama teigiamai.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	4
3.	Personalas	3
4.	Materialieji ištekliai	4
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	20

* 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)

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IV. SANTRAUKA

Ši dvejus metus dėstoma nuolatinė studijų (trejus metus – iššestinių studijų) programa, kurią baigus suteikiamas statybos technologijų ir vadybos magistro laipsnis, atitinka tikslus ir studijų rezultatus, studijų tipą, lygį ir suteikiamos kvalifikacijos lygį. Programos sandara tenkina teisinius reikalavimus, o studijų dalykai ir (ar) moduliai paskirstyti tolygiai. Modulių turinys atitinka numatomus studijų rezultatus. Personalas yra kvalifikuotas programai vykdyti, o studentų bei personalo santykis yra išskirtinai geras. Personalas tinkamai vykdo mokslinius tyrimus, dalyvauja profesinių organizacijų veikloje ir nuolat tobulinasi, nors ne visada tolygiai. Auditorijos, bibliotekos, skaityklos ir kompiuterių klasės yra itin tinkamos studijoms. Studijų procesas ir studentų vertinimas yra tinkami. Statybos technologijų ir vadybos magistro studijų programą prižiūri VGTU Statybos technologijos ir vadybos katedra bei Statybos ekonomikos ir nekilnojamojo turto vadybos katedra (Statybos fakultetas). Jai tinkamai vadovauja studijų programos komitetas, vykdomas kokybės užtikrinimas.

Vertinimo grupė pasiūlė įgyvendinti kitus galimus patobulinimus. Bendradarbiaujant su visais socialiniais dalininkais daugiau dėmesio reikėtų skirti studijų rezultatų įgyvendinimui ir vertinimui, o personalui suteikti galimybę dalyvauti atitinkamuose

mokymuose. Internacionalizaciją reikėtų plėsti suteikiant mokymosi galimybes, gerinant studentų anglų kalbos žinias, įgyvendinant „Erasmus“ mainų programas ir skatinant darbuotojus aktyviau dalyvauti tarptautiniuose projektuose. Vertėtų imtims veiksmų įtraukiant studentus į mokslinius tyrimus ir projektus. Reikėtų stengtis pašalinti kokybės užtikrinimo spragą nuo savianalizės ir sisteminių duomenų rinkimo iki veiksmų plano įgyvendinimo.

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III. REKOMENDACIJOS

1. Nepaisant to, kad studijų rezultatai pasiekiami, vertinimo grupė pastebėjo, kad jie kol kas studijų procese nevaizina pagrindinio vaidmens, ir rekomenduoja sukurti oficialią sistemą, kaip juos reguliariai peržiūrėti kartu su visais socialiniais dalininkais (studentais, absolventais, socialiniais partneriais ir dėstančiuoju personalu).
2. Šiuo tikslu vertinimo grupė rekomenduoja rengti mokymo kursus ir seminarus dėstančiam personalui tam, kad studijų rezultatai būtų labiau susiję su metodais ir vertinimu.
3. Vertinimo grupė teigiamai įvertino tai, jog plačiai naudojama virtuali mokymo sistema „Moodle“, tačiau rekomenduoja toliau plėsti jos galimybes bei naudoti ją ne tik informacijai perduoti, bet išnaudoti ir kitas jos teikiamas internetines priemones.
4. Nagrinėdama internacionalizacijos klausimą vertinimo grupė pastebėjo, kad siūlomos „Erasmus+“ mainų programos atitinka studentų poreikius, tačiau jose dalyvauja nedaug studentų. Rekomenduojama išanalizuoti esamas kliūtis, pasiūlyti ir įgyvendinti atitinkamus sprendimus.
5. Vertinimo grupė norėtų pakartotinai rekomenduoti gerinti studentų anglų kalbos žinias ir organizuoti jiems kursus, mokymosi užsiėmimus, suteikti mokomąją medžiagą ir užduoti rašyti kursinius darbus anglų kalba.
6. Dėl sumažėjusio studentų skaičiaus vertinimo grupė rekomenduoja kartu su visais socialiniais dalininkais didinti pastangas, kad programa būtų labiau viešinama.
7. Atsižvelgdama į tai, kad didelė dalis studentų derina studijas ir darbą, vertinimo grupė rekomenduoja pasinaudoti ECTS galimybėmis suteikiant kreditus už darbinę patirtį ar dalyvavimą klubų asociacijų veikloje.
8. Mokslinių tyrimų klausimu vertinimo grupė gerai įvertino kai kurių fakulteto narių veiklą, tačiau rekomenduoja visiems jiems vykdyti mokslinius tyrimus kartu su studentais, aktyviai skatinti juos dalyvauti nacionaliniuose ir tarptautiniuose projektuose.
9. Kokybei užtikrinti vertinimo grupė rekomenduoja sistemiškai rinkti informaciją ir duomenis apie programą bei juos periodiškai vertinti.

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