



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Kauno technologijos universiteto
STUDIJŲ PROGRAMOS “STATYBOS INŽINERIJA” (*valstybinis kodas - 621H20001*)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF “CIVIL ENGINEERING” (*state code - 621H20001*)
STUDY PROGRAMME
at Kaunas University of Technology

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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Statybos inžinerija</i>
Valstybinis kodas	621H20001
Studijų sritis	Technologijos mokslai
Studijų kryptis	Statybos inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Antroji
Studijų forma (trukmė metais)	Nuolatinė (2), Iššęstinė (3)
Studijų programos apimtis kreditais	120 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Statybos inžinerijos magistras
Studijų programos įregistravimo data	2007 02 19

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Civil Engineering</i>
State code	621H20001
Study area	Technological Sciences
Study field	Civil Engineering
Type of the study programme	University studies
Study cycle	Second
Study mode (length in years)	Full-time (2), Part-time (3)
Volume of the study programme in credits	120 ECTS
Degree and (or) professional qualifications awarded	Master of Civil Engineering
Date of registration of the study programme	19 02 2007

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.....	4
1.4. The Review Team.....	5
II. PROGRAMME ANALYSIS	5
2.1. Programme aims and learning outcomes.....	5
2.2. Curriculum design	7
2.3. Teaching staff	8
2.4. Facilities and learning resources	10
2.5. Study process and students' performance assessment.....	12
2.6. Programme management	15
III. RECOMMENDATIONS	17
IV. SUMMARY.....	18
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 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.

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

This report is based on the self evaluation report (SER) submitted by the academic team at Kaunas University of Technology as well as the information gained during the on-site-visit in 24th November 2016 for the accreditation of the CIVIL ENGINEERING study programme (state code 621H20001).

Accordingly the team of experts got a clear insight of the delivery of the programmes in the Department from the following discussions during the visit:

- Meeting with senior management and faculty administration staff,

- Meeting with staff responsible for the preparation of SER,
- Meeting with teaching staff,
- Meeting with students,
- Meeting with alumni,
- Meeting with employers, social partners.

Visiting classrooms, lecture halls, libraries and other facilities as well a review of students' term, examination and final papers were the source of additional information.

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 24th November 2016.

- 1. Prof. Roode Liias (team leader),** *Professor, Tallinn University of Technology, Estonia.*
- 2. Prof. Rui Ramos,** *Professor, University of Minho, Portugal.*
- 3. Prof. Nicolaos Theodossiou,** *Professor, Aristotle University of Thessaloniki, Greece.*
- 4. Prof. Wojciech Gilewski,** *Professor, Warsaw University of Technology, Poland.*
- 5. Mr Artiomus Kuranovas,** *"Trevita", director, Lithuania.*
- 6. Ms Milena Medineckiene,** *student of KTH Royal Institute of Technology, Sweden.*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

Analysis of the data about persons who have applied to study Civil Engineering Master study programme shows that there are more applicants to the Civil Engineering study programme than foreseen places.

After the students survey it was found that 85 % of them continued master studies because they wanted to gain deeper knowledge and capabilities in the same area as the received Bachelor's degree and 15 % of the students continued their studies for bigger career opportunities. The information was confirmed during the meeting with students.

On the basis of the above analysis, it can be stated that there is a demand for the professionals graduated from the second cycle of the Civil Engineering study programme and the future increase of such demand is forecasted.

The meetings and the self-evaluation report does explain the need for such a programme within the Lithuanian and especially Kaunas region market. Industry and business organizations,

research centres, representatives of professional associations, graduates, provide positive feedback on the importance and goodness of this programme in Lithuania.

The aim of the second cycle studies of Civil Engineering study programme is to deepen the expertise or acquire new competences necessary to define and creatively solve atypical scientific and practical problems of the building construction by defining their credibility and functionality, assess and predict the status and behaviour of building materials and structures, plan and carry out investigation by applying appropriate techniques and equipment, prepare construction management and optimisation decisions.

The purpose of Civil Engineering study programme is closely connected with the KTU mission and strategic plan of the University. The program of study is carried out in harmony with the Republic of Lithuania Law on Higher Education and Research, the Description of General Requirements for Master Study Programmes, the Description of the Cycles of Study, the Description of the Engineering Study Field Group.

Students' research projects and final degree project of Civil Engineering second cycle study programme are associated with University research directions.

According to the SER there seems to be full correlation of the aims with the purpose of the programme. The presented study goals in general match study objectives, which lie at the basis and form the objectives of civil engineering curriculum. The employers also expressed their satisfaction of the quality of the graduates from this university.

The analysed Civil Engineering second cycle study programme distinguishes by its curriculum and complexity, the need for it is based on and the results of tests carried out, the demand of the labour market, by the positive feedback from social stakeholders and graduates. This program is taught in the English language.

Study programme learning outcomes, teaching, studying, assessment, curriculum requirements and identification of the achieved study level are consistent with the requirements for general and special study outcomes provided in the Civil Engineering Study Field Group Description. Study programme outcomes are grouped together in conjunction with the main aims of the study programme: Knowledge and skills, Engineering Analysis, Engineering Design, Fundamental and applied research, Skills of the practical work for the solution of engineering tasks, Personal and social skills.

For achievement of intended learning outcomes of the Civil Engineering master study programme, fundamental knowledge and understanding of Science, Mathematics and basics of Engineering are necessary. Graduates must demonstrate their expertise in building construction and general engineering contexts, and must thoroughly know and understand the principles of civil engineering, critically grasp the essence of this area.

Civil Engineering second study cycle graduates' opportunities to integrate in the labour market are major. Graduates are prepared to work in the design, expertise, consultation, execution and maintenance of construction, building's exploitation and other engineering or leadership work in construction companies and organizations as well as municipalities.

Civil Engineering study programme is constantly adapted to the profile of the University, academic skills of personal individuals and the needs of the labour market.

The programme is based on the recommendations of the social stakeholders, what is discussed during regular meetings and round tables in the University.

The programme is carried out in two languages: Lithuanian and English.

During the meeting with employers they expressed their satisfaction with the quality and competence of the graduates. This seems employers take part in the development of the courses and the curriculum at *ad hoc*. The employers often consult with lecturers and researchers at the University. The employers are happy with standard of the graduates. The Alumni also expressed their satisfaction with their education and experience during the course.

Programme is often consulted by several employers. However it seems to be more on the informal basis and can be formalized.

2.2. Curriculum design

Civil Engineering second cycle study programme is attributed to the Technological sciences study area, Civil Engineering study field (H200) and is based on the Law on Higher Education and Research of the Republic of Lithuania, the Description of General Requirements for Master's Study Programmes, the Description of the Cycles of Study, the Description of the Engineering Study Field Group, the General Regulation of Technological Sciences (Engineering) Study Field.

Total duration of the Civil Engineering second cycle full-time study programme – 2 years, of the part time studies – 3 years. A number of subjects in the study programme in each semester does not exceed the requirements.

It has to be mentioned that there is an ongoing procedure for updating the programme. In the main the aims and objectives of the programme are the very similar.

According to the SER and data gathered during site visit, the scopes of the entire studies, individual disciplines or groups (including theoretical disciplines, semester projects, internships, and theses), class work and independent work of the students meet the requirements of the legislation regulating studies.

Pedagogical approaches are used throughout the programme by facilitating site visits, laboratory activities and project work.

Study programme teaching/learning process is conducted by using study forms and methods, accentuating the development of operational skills and competences. Applied teaching/learning methods: lectures, practical workshops, seminars, laboratory works, individual work tasks, discussions, group work, field trips/working visits, practical exercises, guest lectures, problem-solving sessions, design projects (project works preparation and visualisation).

Individual work hours are allocated for performance of individual tasks, case analysis, reference and supplementary literature studies, for development of special software packages application skills, search of information and task solution, preparation to defend practical and laboratory works and for preparation for examinations.

The structure, scope and defence of master's degree project is regulated by the General Procedure of Degree Projects Preparation, Defence and Keeping. Concrete requirements for degree project procedure is established by the Faculty which prepares detailed methodological requirements for final degree project, indicating subject and formal instructions, the procedures of project preparation and defence.

The programme content appears to be comprehensive and rational, and it consists of general engineering studies and specialized engineering topics. The volume of the studies is defined in accordance with the time needed to achieve the learning objectives. Knowledge and skills granted during the programme, correlations with learning outcomes of the study programme and with other study models, study methods are clear and adequate.

2.3. Teaching staff

Civil Engineering study programme teachers can work in the second cycle study programme if they have qualifications complying with those established by the Republic of Lithuania and the University. All professors working in the study field programme shall participate in the third cycle study process. The academic education of programme teachers, activity directions, practical and teaching experience, ability to fluently communicate in at least one language widest used in the European countries (English, Russian, German), readiness and initiative to apply more effective teaching methods, scientific and engineering activity efficiency, capability properly council students in study planning and career areas enables to achieve the programme aims and outcomes.

The qualification of the programme teachers corresponds to the requirements established in the Description of General Requirements for Master Study Programmes and the Description of the Group of Engineering Studies Field.

Distribution of the coordinating teachers of the Civil Engineering second cycle study programme according to their pedagogical position is correct. Research fields of professors and

associated professors correspond to the subjects they teach. The professional experience of lecturers teaching applied subjects is also adequate.

Professors, associated professors and lecturers of the Civil Engineering Master's study programme supervise one–two final degree projects depending on the pedagogical workload. Master's final projects were supervised by teachers with the number of supervised final degree projects for one teacher as optimum.

According to the Regulations of Higher Education Teachers Working Time Account pedagogical work is allocated $720 \pm 15\%$ hrs., research activities – $500 \pm 10\%$ hrs. and expert-counselling and methodological activity – $220 \pm 10\%$ hrs.

Civil Engineering in 2011-2016 a. y. Master's full-time study programme included 15-17 working teachers coordinating study field subjects. The majority of them worked at the University as full-time teachers (more than 90 %). Civil Engineering Master's study programme has employed 29 teachers since 2015. 22 of them have full-time employment, 7 in secondary positions (0.5-0.25 of the establishment).

Over the last five years the number of teachers fluctuated insignificantly. The review team would agree that the shift of teachers did not have any negative effect on the quality of studies.

The competence of the staff is defined by the education of the teachers, their experience, innovative abilities, scientific and pedagogical results.

The competence of teachers is evaluated on the basis of their scientific production, teaching and methodical materials, prepared normative documents for the last five years. The average pedagogical experience of one teacher who teaches in the Civil Engineering field's first cycle studies programme is 15 years, and practical – about 16 years.

Analysing the scientific activities of the coordinating teachers who teach the major study modules, it shall be emphasized that during the last five years these teachers published 72 articles at Thomson Reuters Web of Knowledge (ISI Web of Science) with IF impact factor in key list publications, 5 at Thomson Reuters Web of Knowledge (ISI Web of Science) without IF impact factor in key list publications, 116 at international databases scientific publications, 19 at other reviewed scientific publications and 83 publications at reviewed conference proceedings. 39 teaching books were published. This indicates the contribution of the scientific potential of the teachers towards the quality of studies by implementing scientific innovations in the study process. Most of the publications are related to the 2nd as well as 1st degree of studies.

Teachers of Civil Engineering field's study programme are regular organizers and participants of conferences, which are organized periodically by Faculty. For the improvement of

teachers' qualifications, the University organizes various seminars and courses during which the teachers can further develop their skills of pedagogics or foreign languages.

At scientific placement and international exchange programme ERASMUS (Erasmus+) in 2015-2016, 27 % of the program teachers participated.

The reason for relatively low mobility of the teachers is that they take an active part in the research activities as well as they are involved in various national and international committees. Activities of the staff in the scientific as well as professional committees are important from the point of view of study programme on the 2nd cycle.

After the analysis of the provided data it is possible to maintain that the teachers take an active part in the scientific activities, provide scientific production, which is integrated into the study process, they improve their qualification and competences.

The staff is young, motivated and perspective. They actively work not only in the scientific field, but also in the professional areas.

Differences in English language knowledge levels of the teachers is observed. This leads to the conclusion that continuous courses to improve language skills of the staff should be offered if English language studies are to be provided.

2.4. Facilities and learning resources

For the process of implementation of the Civil Engineering second cycle study programme different seat number auditoriums, laboratories, computer classes and reading halls of the Faculty and University are used. Almost all subjects of the Civil Engineering study programme study field are conducted in the premises of Faculty of Civil Engineering and Architecture.

Big influence on the study process is made by connecting the university computers into computer networks with the internet access.

Civil Engineering students can use library-reading hall, situated in the Faculty of Civil Engineering and Architecture and central library-reading hall located in the premises of the Faculty of Economics and Business.

Laboratory works are performed in KTU Faculty of Civil Engineering and Architecture and in the Faculty of Chemical Technology. Laboratories are supplied with necessary equipment and materials.

Master's degree students of the Civil Engineering studies perform their research work individually depending on the character of the investigated object, in specialised laboratories (construction materials laboratory; construction materials and products research methods laboratory) and research and testing laboratories (physical-chemical analysis laboratory, concrete

and solutions (grouts) laboratory, filler laboratory, finishing and insulation materials laboratory, mechanical testing laboratory, microscope and dilatometer testing laboratory, shrinkage and creep tests laboratory, mineral binding materials and thermal processes investigation laboratory, durability tests laboratory, mechanical testing hall).

Key as well as additional laboratory equipment for specialised study field subjects is well completed from the point of view of learning outcomes. Some of the equipment should be renewed (for example old testing machines for the analysis of strength of building materials) .

Students of the Civil Engineering second cycle study programme use computer classes with installed general university software. KTU Computing Centre is taking care of acquisition of this software, their installation, licences and maintenance.

Acquisition of specialised software for the study field subjects maintained by the Faculty.

Faculty paid much of attention to the integration of BIM (Building Information Modelling) methodology into the development of Civil Engineering second study programme. Despite the fact that major part of software was renewed or new correlations with BIM technologies were obtained, the Faculty has prepared a strategic project regarding installation of BIM LAB laboratory. Main obstacle to achieve this is limited financial possibilities, to increase which is intended by carrying out projects and assimilating EU structural funds.

Teachers coordinating modules have indicated in the module programme references that are available for students – textbooks, handbooks or other methodological tools. Preparation or updating of methodological tools necessary for a concrete module is coordinated by a responsible teacher of that module (subject). All prepared methodological tools are reviewed.

In libraries students have an access to electronic catalogue of books and publications, integral informational system ALEPH 500, and installed universal search system. Central library provides possibility to get publications from other libraries, inter-library subscription is available.

Students of the Civil Engineering Master's studies are allowed for the purposes of scientific research work or studies to print out or copy a part of information from subscribed data bases without violation of authors' rights. Students have a free access to the majority of international databases, both while working in the workplaces equipped in the library (access to 53 electronic databases), and while using home computers (to 19 electronic bases).

Students can read online more and more textbooks and handbooks designated for studies. Teachers participating in Civil Engineering second cycle study programme published 39 textbooks and handbooks in 2011-2015 a.y.

Teachers have prepared lot of electronic resources on the open-source online virtual learning environment "Moodle" system, which is used for communication between students and

teachers directly. Students get all learning literature and information, tasks and other resources necessary for studying subjects on “Moodle”. It is convenient for students, where all the learning resources in one place and can be accessed from home via the Internet. That is convenient for teachers also, because they can always renew and improve the content of subjects and in this way students get most recent information of learning subjects.

Civil Engineering study programme is well supplied by printed publications. Publications are available to students in the KTU library. Textbooks, educational books or other methodological means are continually renewed. According to the demand of renewed themes of a concrete module, new methodological means are prepared or ordered in the library. The lack of English language books was mentioned during the meeting with students. The review team would like to stress that more printed English language learning materials are advised even if most of the learning materials are in electronic version. Master’s degree students are given the opportunity to use technological solutions developed by KTU scientists, services provided by accredited laboratories and various equipment necessary for carrying out scientific research.

Currently software is applied in the study process but for solving of typical civil engineering tasks, the lack of specialised programmes is noticeable.

2.5. Study process and students’ performance assessment

To the first course of the Civil Engineering second cycle study programme are eligible persons who have completed the first cycle university studies or have completed the first cycle and bridging courses in cases indicated in the Description of General Requirements for Master Study Programmes and meeting the requirements established by the University.

KTU internet site provides detailed information to the entrants. Meetings with the last year Bachelors are organised in the Faculty and other educational institutions (colleges, universities, etc.) during which students are acquainted with the Master’s study programme, market demands, opportunities with the acquired competences.

Competition points to the Civil Engineering second cycle study programme shows a smaller number of students completing Bachelor’s studies did not affect negatively the admission score to the Master’s studies.

During the meeting with students they expressed that this is a well known University and no more promotions are needed. Mostly KTU first cycle graduates are applicants to the second cycle studies of civil engineering.

Electronic schedules of every semester of the study programme are presented in the KTU Academic Information System. Schedules of auditorium activities according to the Civil Engineering second cycle study programme are compiled in the AIS by a responsible

administrator who coordinates them with the module teachers and considers the expectations of students.

The duration of auditoriums activities – two academic hours each of 45 min. Auditorium practices are group by 2 academic hours (2x45 min.) and 30 minutes break. After 4 academic hours, usually there is a 1 hour long lunch break. This allows teachers and students to optimally organise work.

Students are examined according to the Procedure for Organization of Examinations, which established the procedures of organization, execution and supervision procedures of students' examinations, academic ethics requirements during accounting and responsibility.

Students of the Civil Engineering second cycle are encouraged to participate in scientific or applied science activities.

Analysing the students mobility trends it can be concluded that the number of students incoming to the Civil Engineering Master's degree studies from 2011 to 2015 grew 6.5 times. ERASMUS+ programme has been started to use by the Civil Engineering Master's degree students only since 2014. Since then every year the mobility programme is used by only 1 student.

Students learn in the KTU website about studies, leisure, self-expression opportunities in the university mentoring programme, opportunities of additional practice, invitations to participate in seminars, engagement into research or creative activities, about financial support. They can follow the KTU news on Facebook. In case of questions, they may apply to the KTU Students Affairs Department, Student Information Centre, Civil Engineering Study Programme Manager (hereinafter – SPM), Study Centre of FCEA and address the teachers.

KTU Civil Engineering second cycle study programme students are rendered support which helps solve students' social and professional integration issues during the studies and after graduation, saves in carrying out experimental research, facilitates preparation for the assessment of the acquired knowledge and skills. Study programme descriptions present the annotation of the study programme, detailed study results, professional career opportunities, and study modules.

Active counselling of students on career opportunities is carried out by the KTU Career Centre. Students on the internet website can find the newest job and practice advertisements, information on the events.

For students' leisure activities and to the community of the University Sport Events Unit and KTU art clubs organise various events. Students are provided with the possibilities to go in for sports and join various art groups.

University International Relations Development Fund provides financial support of the dissemination of students' research and methodological investigations abroad, as well as their activities in international scientific and studies organisations, sponsors the participants of international and studies events. Students who wish to deepen their knowledge abroad have a possibility to participate in the world's biggest student exchange programme ERASMUS+.

The interest of the mobility is very low. One of the important reason is that at the moment most of 2nd degree students are working and studying at the same time and it is difficult for them to leave the country even for a couple of months.

Incentive grants are given to the second cycle students and those who do not have academic debts or disciplinary penalties. Encouragement grant of KTU Rector is given for outstanding study and scientific research results and the encouragement grant of the Faculty is given for good study and research work results. Single-issue encouragement grants rendered for active involvement.

University has introduced the grants of the following amounts: KTU Rector's incentive grant for extraordinary study and research results – 6 basic social allowances (hereinafter – BSA); Faculty's incentive grant for good study and research results – 3 BSA; KTU Rector's single-issue incentive grant for outstanding sport, culture, students projects and public activity – up to 8 BSA amount. Faculty's single-issue grant for active sports, culture, students projects and social activity – up to 3 BSA.

Hostel is provided to the University second study cycle students for the period of studies and for the students who have arrived to KTU according to international students exchange programmes.

During the meeting with students they asked for more social places (for group work) available in extended working hours.

To ensure students' active work through the whole semester of studies, ability to apply theoretical knowledge in practice, objective assessment of study outcomes, KTU applies cumulative assessment. By cumulative assessment, study outcomes are estimated through intermediate accounting, and the final mark summarises the marks of intermediate assessment and the exam results.

Criteria of assessment of learning outcomes of every module are presented to students at the beginning of the semester. Teachers, while acquainting students with assessment grades, give oral explanations. Students can discuss with the teacher the objectivity of the assessment.

Final assessment of Master's final project consists of project assessment and defence assessment.

The majority of graduates from the Civil Engineering second cycle study programme have been employed according to the speciality. The recent trends show that the percentage of the employment according to the profession increased. According to the graduates' survey, 77 % of them found jobs according to the speciality and work in a private sector.

During the evaluation visit employers expressed that the graduates from this University are very good and are rated higher than other graduates.

The majority of Civil Engineering second cycle studies graduates who participated in the survey think that the most influential employment factor is work experience (93 %), knowledge and abilities and personal qualities (50 %). Right after the studies, the graduates mostly lack practical skills of the speciality (86 %), design skills (43 %) and general engineering knowledge (29 %). Daily professional activities show the biggest lack of competence in communication on professional issues (36 %), abilities to prepare projects and reports (21 %).

During the meeting with the students several points were highlighted and discussed. These can be summarized below:

- they would like to have more information regarding the various topics offered.
- not all laboratory equipment are new – continuous renovation is recommended.

2.6. Programme management

The programme administration, including the internal structure ensuring quality of studies, and composition and functions of the programme management, are all free and well documented in the SER. The facts were conformed during the visit.

Management of programme is implemented according to the KTU regulations. Civil Engineering programme is regularly updated and elaborated by a permanent organizational body (Study Programme Committee) which operates at the faculty. It closely cooperates with Senate Studies Commission and all the departments responsible for the programme. Social partners are also involved in programme management.

Human resources management is organized on University and Faculty levels.

In 2015, for more efficient management of the study programmes and study quality assurance at the University, study programmes management model was improved.

Since 2016 instead of general Faculty's Study Programme Committees smaller Study Field's Programme Committees were formed which are more closely related to the study programmes assigned to them.

Continual assessment of the Civil Engineering study programme quality is implemented by following the internal study quality management system – Quality Guide, which complies

with the provisions and guidelines for the European higher education quality assurance and main laws and legal acts regulating higher education of the Republic of Lithuania.

To improve the quality of studies, University has a functioning feedback system (round table discussions and involvement of students and employers in the management of study process).

Study quality is closely related to the science and research. The programme teachers participate in research, international projects. Scientific innovations are transferred to the students. Study programme students are also encouraged to engage in scientific activity: participate in conferences, write articles, participate in research, etc.

Social stakeholders are active participants of the study programme assessment and improvement. Faculty of Civil Engineering and Architecture has signed collaboration or support agreements with the social stakeholders, who actively contribute to the improvement of the study quality (material aid for students' practical works, lectures of specialists – practitioners, etc.): Lithuanian Builders Association (LSA), Lithuanian Building Industry Association (LSIA), Lithuanian Association of Civil Engineers, Lithuanian Real Estate Development Association, Lithuanian Architects Union, The Lithuanian District Heating Association, Lithuanian Materials Research Associations, Building Product Testing Laboratories Association, National Passive House Association, LR Ministry of Environment, LR Ministry of Culture, AB "YIT Kausta", UAB "Skirnuva", UAB "Peri", UAB "Ryterna", UAB "Saint Saint-Gobain statybos gaminiai", UAB "Drūtsraigis", UAB "Knauf", UAB "Kaduva", UAB "Mitnija", UAB "Betonika", UAB "Litana ir Ko", AB "Kauno dujotiekio statyba", UAB "Staticus", UAB "Infoera", UAB "Sistela", UAB "Finfoam", UAB "Intelligent BIM Solutions", UAB "TA Hydronics", UAB "Terma" and UAB "Vitaterma". Also, active collaboration partners are State Territorial Planning and Construction Inspectorate under the Ministry of Environment, VĮ "Valstybės turto fondas", UAB "Turto ir verslo tyrimo centras".

Concluding the results of the programme management analysis, it can be said that proper programme administration and quality are ensured by common work of all relevant Department (both to the extent of the Faculty, and the University).

Though students and graduates have excellent conditions to express their opinion and assess the quality of studies (survey system, "round tables" and the students' involvement in various levels of management), they are not active enough to take advantage of such opportunities. It is recommended to motivate the students to be more active in this area.

III. RECOMMENDATIONS

1. It is recommended to maintain and smooth the study process in the way to full equivalence of full-time, part-time and English language studies.
2. Students mobility is to be increased with the internal system of motivation and support.
3. Staff mobility is to be increased.
4. Learning facilities are to be improved systematically (premises, rooms for teamwork, safety, equipment, renovation/upgrading).
5. English language skills of the staff are to be assured.
6. It is advised to increase the number of English language books in the Faculty library and the access to European Norms should be increased.
7. More social places for group work with extended working hours are recommended.

IV. SUMMARY

In general the quality of the delivery and education on the second cycle is good and adequate to the professional situation in Lithuania. A key issue that can be applied for all programmes is the necessity of maintenance and continuing development of teaching for full-time, part-time and English language studies.

Main positive and negative quality aspects of each programme evaluation area are the following:

Programme aims and learning outcomes.

Positive: The programme aims and learning outcomes are well considered and meets labour market needs in compliance to mission and strategic plan of the University. Graduates are prepared to work in the area of civil engineering. Positive feedback on the importance of this programme in Lithuania is provided by the industry, professional associations and graduates.

Negative: None.

Curriculum design.

Positive: Second cycle study programme is well designed on the basis on the law regulations and study requirements. It is possible to study in Lithuanian and in English, full-time and part-time. Building Information Modelling and team work for preparation of joint projects by specialists from different specializations are well implemented. The programme is consistent from the point of view of more advanced studies in the second cycle..

Negative: The students have few site visits to apply their theoretical knowledge. The information regarding various topics and specializations offered is not always clear for students.

Teaching staff.

Positive: The staff is young, dynamic, motivated and well prepared to ensure learning outcomes. Very good conditions for professional development of the teaching staff is created. The staff is active in scientific activities and professional areas on national and international levels.

Negative: Staff mobility is to be extended if possible.

Facilities and learning resources.

Positive: Facilities and learning resources for smooth implementation of the CE field's second cycle studies are provided by the Faculty and University. Much attention to integration of Building Information Technology is paid by the Faculty.

Negative: The premises for studies and complementary activities not always meet the work safety and hygiene requirements. Some laboratory equipment is outdated.

Study process and students' performance assessment.

Positive: Study process is smooth and students are well motivated to work in the area of civil engineering. Students are encouraged to take part in the research and applied sciences activities.

The dormitory and leisure time support is well provided by the University.

Negative: The mobility of students is poor. Social places for group work is limited.

Programme management.

Positive: Programme management system is well considered on various levels of the university.

Quality of studies is supported by a functioning feedback system and quality assurance system.

The study process is smoothly improved with the use of the outcomes of internal and external evaluations.

Negative: None.

V. GENERAL ASSESSMENT

The study programme *Civil Engineering* (state code – 621H20001) at Kaunas University of Technology 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	4
2.	Curriculum design	3
3.	Teaching staff	4
4.	Facilities and learning resources	3
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. Roode Liias
Grupės nariai: Team members:	Prof. Rui Ramos
	Prof. Nicolas Theodossiou
	Prof. Wojciech Gilewski
	Mr Artiomus Kuranovas
	Ms Milena Medineckiene

<...>

V. APIBENDRINAMASIS ĮVERTINIMAS

Kauno technologijos universiteto studijų programa *Statybos inžinerija* (valstybinis kodas – 621H20001) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	4
2.	Programos sandara	3
3.	Personalas	4
4.	Materialieji ištekliai	3
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)

<...>

IV. SANTRAUKA

Apskritai antrosios pakopos studijos ir jų vykdymo kokybė yra gera bei atitinka profesinę situaciją Lietuvoje. Pagrindinė visų programų problema yra nuolatinis studijų, iššestinių studijų ir studijų anglų kalba dėstytojų atnaujinimas ir tęstinis vykdymas. Pagrindinės kiekvienos programos kokybės vertinimo srities stiprybės ir silpnybės yra šios:

Programos tikslai ir studijų rezultatai

Stiprybės. Programos tikslai ir studijų rezultatai yra gerai apgalvoti, atitinka darbo rinkos poreikius, universiteto misiją ir strateginį planą. Absolventai yra pasirengę dirbti statybos inžinerijos srityje. Pramonės atstovai, profesinės asociacijos ir absolventai teigiamai atsiliepia apie programos svarbą Lietuvai.

Programos sandara

Stiprybės. Antrosios pakopos studijų programa puikiai sukurta remiantis įstatymų nuostatomis ir studijų reikalavimais. Galima studijuoti lietuvių ir anglų kalbomis nuolatinio ir iššestinio pobūdžio studijose. Gerai įgyvendinamas statinio informacinis modeliavimas, puikiai vykdomas darbas grupėmis įvairių specializacijų specialistams rengiant bendrus projektus. Ši programa atitinka pažangesnes antrosios pakopos studijas.

Silpnybės. Studentai retai vyksta į darbo vietas, kad galėtų pritaikyti teorines žinias. Teikiama informacija įvairiomis temomis ir apie įvairias specializacijas ne visada studentams aiški.

Personalas

Stiprybės. Personalas – jaunas, dinamiškas, motyvuotas ir gerai pasirengęs studijų rezultatams užtikrinti. Dėstytojams sukuriamos labai geros sąlygos tobulintis. Personalas aktyviai vykdo mokslinę veiklą ir dirba profesinėse srityse nacionaliniu ir tarptautiniu lygmeniu.

Silpnybės. Jei įmanoma, reikia stiprinti personalo judumą.

Materialieji ištekliai

Stiprybės. Antrosios pakopos Statybos inžinerijos studijų programai materialiuosius išteklius suteikia fakultetas ir universitetas. Fakultetas daug dėmesio skiria statinio informacinei technologijai.

Silpnybės. Studijų ir papildomos veiklos patalpos ne visada atitinka darbo saugos ir higienos reikalavimus. Dalis laboratorinės įrangos yra pasenusi.

Studijų eiga ir studentų darbo vertinimas

Stiprybės. Studijų procesas vykdomas sklandžiai, studentai gerai motyvuoti dirbti statybos inžinerijos srityje. Studentai skatinami dalyvauti moksliniuose tyrimuose ir taikomojoje mokslinėje veikloje. Universitetas teikia bendrabučius ir paramą laisvalaikio užsiėmimams.

Silpnybės. Menkas studentų judumas. Socialinės erdvės grupiniam darbui yra ribotos.

Programos vadyba

Stiprybės. Programos vadybos sistema yra gerai apgalvota įvairiais universiteto lygmenimis. Studijų kokybę grindžiama funkcionuojančia grįžtamojo ryšio sistema ir kokybės užtikrinimo sistema. Studijų procesas sklandžiai gerinamas atsižvelgiant į vidaus ir išorės vertinimo rezultatus.

<...>

III. REKOMENDACIJOS

1. Rekomenduojama palaikyti ir sulygtinti studijų procesą taip, kad jis visiškai atitiktų nuolatinės studijas, išėstines studijas ir studijas anglų kalba.
2. Reikėtų skatinti studentų judumą taikant vidaus motyvacinę ir skatinimo sistemą.
3. Vertėtų didinti personalo judumą.
4. Reikia sistemiškai gerinti materialiuosius mokymosi išteklius (patalpas, grupinio darbo kabinetus, saugą, įrangą, juos renovuoti ar atnaujinti).
5. Reikia užtikrinti personalo anglų kalbos įgūdžius.
6. Fakulteto bibliotekai patariama įsigyti daugiau knygų anglų kalba ir didinti prieigą prie Europos normų.
7. Rekomenduojama įrengti daugiau ilgesnį laiką dirbančių socialinių erdvių, kuriose būtų galima vykdyti darbą grupėmis.

<...>

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- Paslaugos teikėjas patvirtina, jog yra susipažinęs su Lietuvos Respublikos baudžiamojo kodekso 235 straipsnio, numatančio atsakomybę už melagingą ar žinomai neteisingai atliktą vertimą, reikalavimais.

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- Vertėjos rekvizitai (vardas, pavardė, parašas)