



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Kauno technologijos universiteto  
**STUDIJŲ PROGRAMOS *STATYBOS INŽINERIJOS (612H20001)*  
VERTINIMO IŠVADOS**

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**EVALUATION REPORT  
OF *CIVIL ENGINEERING (612H20001)*  
STUDY PROGRAMME**  
at Kaunas University of Technology

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Išvados parengtos anglų kalba  
Report language – English

## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Statybos inžinerija</i>
Valstybinis kodas	612H20001
Studijų sritis	Technologijos mokslai
Studijų kryptis	Statybos inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinė (4), Išestinė (6)
Studijų programos apimtis kreditais	240 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Statybos inžinerijos bakalauras
Studijų programos įregistravimo data	1997 05 19

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## INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	<i>Civil Engineering</i>
State code	612H20001
Study area	Technological Sciences
Study field	Civil Engineering
Type of the study programme	University studies
Study cycle	First
Study mode (length in years)	Full-time (4), Part-time (6)
Volume of the study programme in credits	240 ECTS
Degree and (or) professional qualifications awarded	Bachelor of Civil Engineering
Date of registration of the study programme	1997 05 19

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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.

### ***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 24<sup>th</sup> November 2016 for the accreditation of the CIVIL ENGINEERING study programme (state code 612H20001).

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 24<sup>th</sup> 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***

The study programme of the first cycle of the Civil Engineering field is targeted to the development of the general erudition, rendering the theoretical basics of the technological direction, and professional civil engineering skills necessary for the ability to work independently. By implementing the targets of the first study cycle Civil Engineering field's study programme it is expected to release such graduates of KTU who could have good adaptation preconditions being able to adapt at socially-oriented, permanently developing market economy in Lithuanian, and other countries, primarily of the EU countries.

The aim of the first cycle Civil Engineering field's study programme is to provide with the basics of fundamental, humanities, social and technological subjects, as well as special knowledge of civil engineering, develop skills in solving practical problems of civil engineering work in construction and related areas.

The aim of the Civil Engineering field's study programme is closely related to the KTU mission and strategic plan of the University. This study programme is in compliance to law regulations.

The need of the first cycle study programme of Civil Engineering is based on the demands of the labour market and results of various researches performed, positive opinions of graduates and social stakeholders.

The meetings and the self-evaluation report does explain the need for such a programme within the Lithuanian and especially Kaunas region market. Part-time study programme students already work in construction-related companies of Kaunas city and district and would like to carry out their professional practice at the same company. English language programme is mostly oriented for foreigners.

The modified study programme of Civil Engineering field has been implemented from 2015.

The study programme outcomes are grouped by relating them with the major targets 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. The programme is clear and publicly accessible in the Internet as well as in the Faculty.

Graduates are prepared to work in the field of building structures and engineering systems design, construction and operation, manufacturing of construction products and business of construction and can continue their studies in Civil Engineering Master's.

Industry and business organizations, representatives of professional associations, graduates, provide positive feedback on the importance of this programme in Lithuania.

There is 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.

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* basis. However employers often consult with lecturers and researchers at the University. The employments are satisfied with standard of the graduates. The Alumni also expressed their satisfaction with their education and experience during the course.

Detailed analysis of Civil Engineering study programme allow to conclude that it is contemporary, flexible and meets the needs of the EU market and society. The courses offered in two languages – Lithuanian (full-time and part-time) and English are to be fully equivalent.

Modified programmes introduced in 2015/2016 and planned for the future are to be continuously evaluated by the employers.

## **2.2. Curriculum design**

According to the information provided in the SER the Civil Engineering field's first cycle study programme was prepared on the basis of the Law on Higher Education of the Republic of Lithuania, the Description of the General Requirements of Academic Degree Providing First Cycle and Full-Time Study Programmes, the Description of Engineering Studies Fields Group, the General Regulations of Technological Sciences (Engineering) Studies.

Civil Engineering field's study programme is ascribed to the direction of the technological studies area called Civil Engineering (H200). The graduates of this programme receive Bachelor's degree of this area.

The mandatory study subjects (195 credits) ensure that the students receive knowledge and skills necessary for the speciality of civil engineering. Major Field Subjects (33 credits) and Optional Subjects (12 credits) are for the development of the erudition of the students their general education and to receive additional knowledge and skills in the selected study area [SER – page 15].

The academic load for the students is defined on the basis of the Academic Regulamina of KTU. The total duration of the first cycle Civil Engineering field full-time studies (in Lithuanian and English) is 4 years. The number of study subjects in each programme and each semester does not exceed the requirements, i.e. 7 mandatory study subjects per one semester. Each programme semester has 30 credits. The duration of the first cycle part-time studies is 6 years. For part-time students who have individual study plans, the duration of the studies can also be shorter than 6 years, but it shall be at least 5 years [SER – page 15].

On the basis of the EU directive on public tenders, adopted in 2013 which allows the EU member states creating the possibilities in their legal acts to use Building Information Modelling (BIM) in all publicly financed projects, and following one of the strategic targets of the Lithuanian building construction sector, and the initiative of the social stakeholders, the Civil Engineering field's first cycle study programme was reformed in 2015. The major updates are related to the implementation of the digital Building Information Modelling (BIM) and team work for preparation of joint projects by specialists from different study programmes and specializations. According to the experts experience and knowledge these updates shall increase the demand of the graduates in the labour market.

It is strongly recommended to introduce the BIM with prudence and observe carefully the trends of BIM in civil engineering market.

Analysis results show that Civil Engineering field's first study cycle study programme is oriented towards the development of independent studies. This elaborated feature enables the graduate to integrate easier and adapt in the labour market.

Civil Engineering field's first cycle study programme has 4 specializations implemented: Building Materials, Buildings Services Systems Engineering, Construction Technology and Engineering Structures, with different and well defined content and learning outcomes.

Study programme is compliant with the regulations set for such a programme with regards to its content and credit rating.

According to the SER, the programme outlined appears to be consistent. Technical subjects are successive, leading from general education principles and basic studies to more specialized subjects.

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 works, seminars, laboratory works, individual work tasks, discussions, group projects, cognitive exchange of professional practice, working visits, practical assignments, lectures of visiting professors, problem solving sessions, design (project works preparation and visualisation).

Individual work hours are allocated for performance of individual tasks, preparation of semester projects, 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.

Bachelor's final project preparation, defence and storage procedures requirements are provided in the Description of Regulations for the Final Paper Preparation, Defence, and Storage.

The graduation semester covers only professional practice and Bachelor's final project.

The programme content appears to be comprehensive and rational. It consists of general studies (humanities, language and social science), management, mathematics and science, engineering fundamentals, and specialized engineering topics. The core groups of the study programme are interconnected through the general subjects. The volume of the studies is defined in accordance with the time needed to achieve the learning objectives. During studies cognitive, practical and transferable skills are provided.

During the meeting with the students the following points were highlighted and discussed:

- the extended information is required when starting the course,
- they would like to have more information regarding the various topics offered,

- they have few site visits and they would like to see more in order to visualize and apply their theoretical knowledge.

The expert team strongly recommend the third point highlighted by the students as an important factor for conformity of theory and practice.

The employers are satisfied with standard of the graduates.

### **2.3. Teaching staff**

According to the information from SER the Civil Engineering field's first study cycle programme coordinating teacher division upon their pedagogical degree is the following: professors 29 %, associated professors 41%, lecturers and assistants 30%, and the number of all teachers teaching the main study modules (subjects), and their division is the following: professors 14%, associated professors – 44%, lecturers and assistants 41%. The number of teachers teaching study field subjects for 2015-2016 having a scientific degree is 71 %. The Civil Engineering field's study programme field complying research activities are carried out by more than 65 % coordinating teachers and more than 55 % of total teachers who teach the major study modules.

The study programme teacher compliance to the qualification requirements is defined on the basis of the Law on Higher Education of the Republic of Lithuania and the Description of the Procedure of Teachers and Researchers Attestation and Competition to Take Positions. The Commissions of University Academic Staff and Faculty Attestation and Competition are established by the Rector attest the teachers at least once during their service term of five years. The number of students per one teacher, for the period of 2015-2016 years, is 4.85 what is very good factor.

The staff is selected on the basis of study programme modules (subjects) specifics, study field and teachers pedagogic workload. The annual pedagogical load of teacher's unit is made of 1,440 hours from which half (720±15% hours) is devoted for the pedagogical work, 500±10% hours for the research activities, and 220±10% hours for expertise-consulting and methodical activities.

For the Bachelor's final project, on average, one teacher supervises 3 final degree project students who study in the programme.

First cycle full-time study programme of Civil Engineering field 2011-2016 had 23-30 teachers who coordinated study field subjects. More than 90 % of the teachers worked at the University on a full-time basis. During recent five years the number of the teachers changed insignificantly: 4 teachers left the University, 2 from which due to respectable age, and 8 PhD students from 10 who defended their thesis, continue teaching at the Civil Engineering field's

study programme. The change of the study programme teachers based on age groups for the period evaluated is related to the decision of the heads of the University and their strategic target to improve the qualification of the teachers and to improve the staff. Almost half of the pedagogical personnel is of 40-50 years of age.

The qualifications of teaching staff are excellent and adequate to ensure learning outcomes. The staff is young and well motivated. The KUT creates very good conditions for professional development of teaching staff.

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 1<sup>st</sup> as well as 2<sup>nd</sup> 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. For the development of the scientific competence much importance is provided by the incoming scientists to the KTU, who organize seminars, take part in scientific discussions, read lectures.

The reason for relatively low mobility of the teachers is that the teachers take an active part in the research activities as well as they are involved in various committees. The involvement in professional and scientific committees is, on the other hand, necessary for smooth development of the Faculty.

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.

As it was mentioned before 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 conclusion that continuous development of the language skills of the staff should be assured, even if the current level is enough.

#### ***2.4. Facilities and learning resources***

The premises for studies and complementary activities not always meet the work safety and hygiene requirements. The examples were visible during the visits in laboratories, lecture rooms and spaces for studying (inside and outside the buildings). Main repair works have been carried out in the classrooms and surroundings but a lot of work is to be done.

For the process of implementation of the Civil Engineering field's first 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 field's study programme study field are conducted in the premises of Faculty of Civil Engineering and Architecture (CEAF). During the laboratory classrooms students are divided into sub-groups. If computerized workplaces are needed, computer classes are used.

It is stated in SER and during site-visit confirmed that for the studies of the field laboratories of CEAF Laboratories centre are used: Laboratory of Building Structure Tests, Study Laboratory of Timber and Metal Structures, Soil Mechanics teaching Laboratory and several materials laboratories which are located in the IX house. The Study Laboratory of Timber and Metal Structures has special teaching equipment installed for testing of loaded metal beams units in relation to their displacement and beam bending. Other laboratories like heating System teaching Laboratory, Ventilation and Air Conditioning Teaching Laboratory, Liquid Mechanics Laboratory are used and they are located in the XV house.

Some of the equipment used for special laboratory work is outdated (old laboratory equipment for Strength of Materials as an example). It is important for programme implementation to find a good balance with the use of modern and older but good enough laboratory equipment.

Students of the Civil Engineering field's first 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 necessary for the study field subjects is taken care by the Faculty.

Faculty paid much of attention to the integration of BIM (Building Information Modelling) methodology into the development of Civil Engineering field's first 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.

For individual work students can use library-reading hall, situated in the FCEA and central library-reading hall located in the premises of the Faculty of Economics and Business. Here the students can order and use the books of the library, scientific journals, articles, and etc., also perform a computerized search in the database of the Library, use internet.

Practice is carried out during the semester in accordance with the practice procedure which is made on the basis of the procedures defining student practice organizing, supervision, monitoring, and evaluation. Depending on the specialization of the Department carrying out the practice, the coordinators of the practice help the students to select companies on the basis of their specialization and prepare individual practical tasks.

The University has signed agreements with several big building construction companies, such as AB "YIT Kausta", UAB "COWI Lietuva", UAB "Markučiai", UAB "Knauf" and these companies take 3 -10 students for professional practice every year. About 10-20% of all students select their own places of practice. The most common part-time students themselves choose the place of practice in building companies or institutions where they are already working.

The students are provided with the opportunity to carry out their practice abroad. Programme ERASMUS+ facilitates the mobility of the students and receiving of the international professional experience.

Students most often chose practice in Lithuanian companies and they seldom take part in the Exchange Programme.

In general the learning facilities are strong enough but needs continuous development.

Teachers coordinating modules have indicated in the module programme references that are available for students – textbooks, handbooks or other methodological tools. All prepared methodological tools are reviewed.

Civil Engineering field's study programme is well supplied by printed publications. Publications are available to students in the KTU library. Textbooks, educational books or other methodological tools are continually renewed. According to the demand of renewed themes of a

concrete module, new methodological means are prepared or ordered in the library. Every year KTU library buys scientific and educational literature on civil engineering in foreign languages.

The lack of English language books is defined by the 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.

In libraries students have an access to electronic catalogue of books and publications and installed universal search system. Central library provides possibility to get publications from other libraries, inter-library subscription is available. The library renders access to 20 foreign the suppliers' electronic sources (49 full-text and referential data bases).

There is an access from the KTU computers to 53 electronic databases. 19 electronic databases can be accessed by students from home computers.

More and more often the open-source online virtual learning environment "Moodle" is used. Teachers prepared a lot of electronic resources on "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".

There is some software not compatible for teaching in English language (the software for the Finite Element Method as an example). It is necessary to upgrade some equipment of the laboratory works.

### ***2.5. Study process and students' performance assessment***

Persons having the certificate of the secondary education have the right to apply to the Civil Engineering field's first cycle study programme. The competition score calculation system is provided in the KTU Admission Rules each year. The KTU website provides detailed information to the applicants: general admission conditions, competitions and events.

As it was confirmed during the meeting with students the motivation of the admitted students is strengthened from the first day of studies. All first-year student groups have their own Mentors, i.e. higher-course students who help the first-year students to get to know the study requirements, consult them on many important issues. During the studies, the start-up Mentors, academic Mentors and career Mentors carry out talks with the students who chose them. Electronic schedules of every semester of the study programme are presented in the KTU Academic Information System (AIS). Schedules of classrooms activities according to the Civil Engineering field's first 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 the academic auditorium activities consists of two academic hours of 45 minutes. The auditorium activities are grouped by 2 academic hours each (2x45 min) with a break of 30 minutes. After 4 academic hours usually there is a lunch break of 1 hour. This allows both teachers and students to organize their time in an optimal manner.

The students take exams on the basis of the description of examination procedures which defines the requirements of the examinations (passings) organization, their implementation and supervision, requirements of academic ethics during the examinations and related responsibilities.

The students of Civil Engineering field's first cycle full-time and part-time studies prepare their final degree project on the basis of the selected area and the corresponding area of the Department specialisation.

During the last five years, the numbers of incoming students to the Civil Engineering field's first cycle study programme increased.

Civil Engineering field's first cycle students are encouraged to take part in the research and applied sciences activities. The students who are interested in scientific research, can find all news about laboratories, scientific researches performed, international projects and opportunities to participate in them.

The used evaluation system enables the teachers to evaluate the achievements of their students in a consistent and impartial manner.

KTU provides the possibilities for the programme students to take an active part in scientific-research and study activities.

The students can find information about studies, free time, and self-expression possibilities under our University's mentorship programme on the KTU website, they also get to know about the opportunities of additional practices, participation in seminars, research and creative activities, financial support. They can follow the news of KTU on Facebook. If they have any questions, they can contact the KTU Students Affairs Department, Students Information Centre, FSPM, CEAF study centre, mentors and teachers.

First year students, during the course of the semester have introductory lectures on their selected studies, building sector influence and its dependence on the economic situation of the country, their career opportunities are discussed after in relation to the selection of one or another alternative.

Active student consulting on career opportunities is provided by the KTU Career Centre.

As it was mentioned during the meetings with the staff and with the employers study programme teachers are in close cooperation with employers.

For the leisure time of the students and the University community, there is the sports division of the KTU, KTU art groups organize various events.

The International Relations Development Fund of the University provides financial support to the dissemination of scientific and methodical research broad, their activities in the international science and study organizations, provides support for the international science and study events participants. The students who want to develop their knowledge abroad, have opportunities to study at the biggest exchange programme ERASMUS+.

Unfortunately only few students apply for the Erasmus Programme. The 1<sup>st</sup> degree students are afraid to leave the country for Erasmus studies because of possible problems with financial support as well as problems with foreign languages.

The University has established the following scholarship amounts: the Incentive Scholarship of the KTU Rector for exceptional study and scientific activities performance up to 6 basic social payments (BSP); the incentive scholarship of the Faculty for good study and scientific activities performance up to 3 BSP; the incentive scholarship of the KTU Rector for exceptional study and scientific activities performance up to 8 BSP, the single the incentive scholarship of the Faculty for active sports, culture, student needs, and public activities up to 3 BSP.

The dormitory is provided for the University first cycle study students for the period of studies, also for the students who arrived to the KTU on the basis of international exchange programmes.

During the meeting with students they asked for more social places (for group work) available in extended working hours. Extended working hours of places for group work is recommended for more integration of students in the learning process.

For the evaluation of knowledge, abilities and skills, the University uses a ten-grade proportional evaluation system. The criteria for the evaluation of each module are presented to the students at the start of the semester.

The final evaluation score of the Bachelor's final degree project is made of the project score and defence score.

The majority of Civil Engineering field's first study cycle graduates found work by their specialities. The tendencies of the recent years show that the percentage of students who get employed by their speciality increased.

The best students from the first study cycle of full-time studies continued their studies for the Master's degree.

## **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 in the management of study process as the examples).

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

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 necessary 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. More careful checking of coursework is needed.
7. It is advised to increase the number of English language books in the Faculty library and the access to European Norms should be increased.
8. More social places for group work with extended working hours are recommended.

#### **IV. SUMMARY**

In general the quality of the delivery and education of the first cycle studies 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 and can continue their studies in CE Master's. Positive feedback on the importance of this programme in Lithuania is provided by the industry, professional associations and graduates.

Negative: None.

##### ***Curriculum design.***

Positive: First 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 – technical subjects are successive, leading from general education and basic studies to more specialized subjects.

Negative: The information regarding various topics offered is not always clear for students. Lack of complementary information about planned site visits for students to apply their theoretical knowledge was noticed.

##### ***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 first 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 – 612H20001) 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
	<b>Total:</b>	<b>20</b>

\*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

&lt;...&gt;

## V. APIBENDRINAMASIS ĮVERTINIMAS

Kauno technologijos universiteto studijų programa *Statybos inžinerija* (valstybinis kodas – 612H20001) vertinama **teigiamai**.

<b>Eil.N r.</b>	<b>Vertinimo sritis</b>	<b>Srities įvertinimas, balais*</b>
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
	<b>Iš viso:</b>	<b>20</b>

\*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)

&lt;...&gt;

## IV. SANTRAUKA

Apskritai pirmosios pakopos studijos ir jų vykdymo kokybė yra gera ir atitinka profesinę situaciją Lietuvoje. Pagrindinė visų programų problema yra nuolatinų studijų, išstęstinių studijų ir studijų anglų kalba dėstyto 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 ir gali toliau studijuoti statybos inžinerijos magistro pakopos studijose. Pramonės atstovai, profesinės asociacijos ir absolventai teigiamai atsiliepia apie programos svarbą Lietuvai.

Silpnybės. Nėra.

***Programos sandara***

Stiprybės. Pirmosios pakopos studijų programa puikiai sudaryta remiantis įstatymų nuostatomis ir studijų reikalavimais. Galima studijuoti lietuvių ir anglų kalbomis nuolatinio ir išstęstinio pobūdžio studijose. Gerai įgyvendinamas statinio informacinis modeliavimas, puikiai vykdomas darbas grupėmis įvairių specializacijų specialistams rengiant bendrus projektus. Ši programa vykdoma nuosekliai – techniniai dalykai dėstomi nuosekliai, nuo bendrojo išsilavinimo ir pagrindinių studijuojamų dalykų pereinama prie labiau specializuotų dalykų.

Silpnybės. Teikiama informacija įvairiomis temomis ne visada studentams aiški. Pastebėta, jog trūksta papildomos informacijos apie planuojamus apsilankymus darbo vietose, kuriose studentai galėtų pritaikyti turimas teorines žinias.

***Personalas***

Stiprybės. Personalas – jaunas, dinamiškas, motyvuotas ir gerai pasirengęs studijų rezultatams užtikrinti. Dėstytojams sukuriama 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. Pirmosios pakopos Statybos inžinerijos studijų programai materialiuosius išteklius suteikia fakultetas ir universitetas. Fakultetas skiria daug dėmesio statinio informacinės technologijos integracijai. 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 kokybė 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 sulyginti studijų procesą taip, kad jis visiškai atitiktų nuolatinės studijas, išėstines studijas ir studijas anglų kalba.
2. Reikėtų skatinti studentų judumą naudojant 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. Reikėtų atidžiau tikrinti kursinius darbus.
7. Fakulteto bibliotekai patariama įsigyti daugiau knygų anglų kalba ir didinti prieigą prie Europos normų.
8. 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)