



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

**KAUNO TECHNIKOS KOLEGIJA**  
**STUDIJŲ PROGRAMOS *STATYBA* (65302T101,  
653H20001)**  
**VERTINIMO IŠVADOS**

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**FINAL REPORT**  
**OF *BUILDING* (65302T101, 653H20001)**  
**STUDY PROGRAMME**  
**at KAUNAS TECHNICAL COLLEGE**

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## DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Statyba</i>
Valstybiniai kodai	65302T101 (653H20001)
Studijų sritis	technologijos mokslai
Studijų kryptis	statybos inžinerija
Studijų programos rūšis	koleginės studijos
Studijų pakopa	pirmoji
Studijų forma (trukmė metais)	nuolatinė (3)
Studijų programos apimtis kreditais <sup>1</sup>	120
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Statybos inžinerijos profesinis bakalauras
Studijų programos įregistravimo data	2002-08-30

<sup>1</sup> – vienas kreditas laikomas lygiu 40 studento darbo valandų

## INFORMATION ON EVALUATED STUDY PROGRAMME

Name of the study programme	<i>Building</i>
State code	65302T101 (653H20001)
Study area	Technological Sciences
Study field	Civil engineering
Kind of the study programme	College studies
Level of studies	First
Study mode (length in years)	Full-time (3)
Scope of the study programme in national credits <sup>1</sup>	120
Degree and (or) professional qualifications awarded	Professional Bachelor of Civil engineering
Date of registration of the study programme	30-08-2002

<sup>1</sup> – one credit is equal to 40 hours of student work

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## **I. INTRODUCTION**

This Technologies and Design as well as the information gained during the on-site-visit in December 2010 for the accreditation of the Civil Engineering study programme at the Department of Engineering Systems of the Faculty of Civil Engineering of the College (state code–65302T101). The report is detailed and comprehensive and does cover all the required fields.

Accordingly the team of experts got a clear insight of the delivery of the programmes in the college from the documents submitted as well as the lively discussions during the visits. All documents and presentations were well prepared and seriously and comprehensively presented. The evaluation of the study programme Civil Engineering (65302T101)” of the College was part of several evaluations of study programmes in the field of construction, building and civil engineering in Lithuania. This gave team of experts an excellent opportunity to view at first hand the state of the education and the delivery of courses in that field in the five study programmes.

In general the quality of the delivery and education is good and adequate to the professional situation in Lithuania. A key issue for all programmes is the question of the setting up and the integration of applied research in the programmes. At the moment there is a clear lack on this level and especially in the field of energy-efficient buildings in general and the specific study-programmes in construction, civil engineering, would be expected to be a vehicle for such work. This would also help to establish this topic as a key aspect for a contemporary education in the field of construction, building and civil engineering.

Another issue that can be applied for all programmes is the necessity of strengthening the teaching of foreign languages, mainly the English language. This is essential to prepare graduates for the international market and for further education of the students. This issue is considered crucial and needs more initiative from all those involved.

From these general issues the panel of experts can envisage a common strategy of the study-programmes in Lithuania emerging in order to ensure the efficient delivery of courses and almost a necessity to establish educational methods of the highest possible quality.

## **II. PROGRAMME ANALYSIS**

### ***1. Programme aims and learning outcomes***

#### **1.1. Programme demand, purpose and aims**

##### ***1.1.1. Uniqueness and rationale of the need for the programme***

Kaunas Technical College (hereafter KTC) provides higher non university education, confers professional Bachelor’s degree and professional qualification of an engineer, considering new challenges in the society, global processes, dynamic changes in economy, technology and other fields, and aims to stay in the education market as a competitive and high qualification specialist training institution. Having completed the study program “Civil Engineering” at the Civil Engineering department at the Civil Engineering faculty of KTC and acquiring the planned competences the graduates get the possibility to act in the working environment or continue studies at higher cycle education institutions.

Labour market research showed, that 60 day-time students and 30 part-time students would have had the opportunity to be employed in the Kaunas region construction enterprises. The demand for this amount of specialists was confirmed by the labour market research performed in 2007. 88% of enterprises would have given the employment priority to the KTC graduates. The

demand for the study programme “Civil Engineering” is also illustrated by the results of graduates’ employment (see Table 2.1.1) that was from 78% to 92%. Within the year 2009 there was decrease of graduates employment to 24%. However it is related with big economical and financial crisis at Lithuania and within restarting economical wells in Lithuania the need of this program will be restored. This was approved by participants from employers who participated at the visit meetings.

The significant assistance in training practical skills is rendered by construction enterprises; the college closely cooperates with Kaunas University of Technology, as well as other educational and scientific institutions.

University and non university study programmes occupy different niches, since by the General Regulation of Technology Science Studies, non university studies are aimed to the application of technology and science knowledge, project implementation and control of technological processes, while the university studies deal with the development and design of knowledge and technology.

In order to provide the conditions for students’ academic mobility, this program was created in cooperation with other colleges in the Republic of Lithuania (cooperation with Vilnius College of Technologies and Design also Panevėžys College) who deliver similar programmes and it states that there is about 20% difference between the various programmes.

There was presented, that new joint “Civil Engineering” program within implementation new ECTS credit system together with other mentioned colleges under development. There was no detailed documentation presented during the short site visit. However information presented from different sources looks quite confident.

#### *1.1.2. Conformity of the programme purpose with institutional, state and international directives*

The study programme “Civil Engineering” has logic aims, structure, content and adequate study methods, agrees with the college development strategy, since, when the college was recognized “de jure”, the aims and the study content were formulated in accordance with the requirements of higher education programs. The programme is similar to study programmes in other Lithuanian higher schools.

From presented material clear view, that this program provides students with the knowledge and skills necessary for the construction engineer, and also fit to all related regulations.

#### *1.1.3. Relevance of the programme aims*

The aims of the study programme have been formulated in order to provide the possibility of acquiring all the competences, presented in the Civil Engineer Training Standard and the study programme. The aims are formed within the boundaries of all necessary competences.

Having completed study programme “Civil Engineering” and acquired the qualification degree of civil engineer, the graduates are capable to supervise the building construction, repair and maintenance, to design constructional part of buildings, except those of special-purpose, to convey information, ideas and problems, collect and interpret information. The study programme is formed so, that the graduates had sufficiently trained skills for individual studying, which are essential for the studies in the next study cycle. The graduates of the KTC study programme “Civil Engineering” are suitable to work not only in Kaunas region or within the country, but also in the European market. About 3 % of graduates successfully work at the construction companies abroad.

Having ascertained the demand for civil engineering specialists, the employers’ estimation about the graduates and the graduates’ employment rates, the conclusion is, that the implementation of the “Civil Engineering” study programme is essential and the college is able to qualitatively implement it, since it has sufficient experience in the field of specialist training and the potential of pedagogical staff for the implementation of the programme is fully completed....

## **1.2. Learning outcomes of the programme**

### *1.2.1. Comprehensibility and attainability of the learning outcomes*

The study programme activity fields, programme and learning outcomes make certain that the graduate will have sufficient knowledge, cognitive, practical as well as transferable skills and will be able to apply them in practical and professional activity. Detailed structure and list of study outcomes are presented at table 2.1.4.

According to presented information learning outcomes are analyzed and improved according to graduates and other stake holders surveys. It was confirmed by the opinion of graduates and employers during the site visit. There was expressed their satisfaction with the way the college teaches its students and involving them to the study process improvement activities. Some employers are involved in the revision of the curriculum of the subjects and assessment of final year projects. Some of the employers that were present do offer placement for the students place for practices. It was mentioned both full time and part time students program correlation within few differences, that part time students always have more practice, but all are sufficient.

### *1.2.2. Consistency of the learning outcomes*

The learning outcomes presented in table 2.1.4, belong together; they supplement each other, do not double and form the entity of necessary skills and abilities to be acquired. For instance, the learning outcome “to choose the constructional solution of the building” is supplemented by the learning outcomes “to select the constructions based on architectural solutions” and “to calculate loads, impacts and simple constructions”.

### *1.2.3. Transformation of the learning outcomes*

The validity of the learning outcomes is evaluated by performing the survey of Kaunas region civil engineering companies. In the survey the biggest certified civil engineering companies, such as “KAUSTA”, “KAMINTA“, “ATOLAS”, “ARAUŠA”, “KAUNO TILTAI” and others participated. The surveys were performed in 2001/2002 and 2007/2008 TT-V-06. The companies approved of the learning outcomes and did not express any wish to change or correct them. The study programme “Civil Engineering” was developed and approved in 2002, in 2005 it was corrected, in accordance with the Civil Engineer Training Standard and in 2006 it was updated, in accordance with the General Regulation of Technological (Engineering) Science Field. Now is ongoing preparation of new study program within implementation ETCS credit system.

Within site visit meetings with students and employers it is approved that general theoretical and practical preparation level was enough. However from presented material and information at the meetings seems that communication and involvement of students and employers to the future development of this study program could be increased. Missing involvement of employers and students to applied research activities, information about new technologies presentation at studies programs. But this was the lack from all parties. To the questions regarding virtual modelling or new energy efficiency improvement in buildings models there was very weak presentation from all parts. Even if it is presented by one party, than were not approved by other. Plans about implementation some software for virtual modelling was mentioned within teachers, but no mentioned or even no asked from students or employers. Innovation and research areas related with study program should be improved in the future. Involvement of more experienced partners from foreign countries would be an advantage.

## **2. Curriculum design**

### **2.1. Programme structure**

#### *2.1.1. Sufficiency of the study volume*

The scope of the programme is 120 credits – 4800 hours. One credit (40 hours) is the students' week of work, including theoretical, practical and individual studies. The study programme structure is made of: general higher education subjects – 8 credits, basic engineering subjects – 58 credits, special professional subjects – 54 credits. The optional subjects amount to 6 credits, learning and professional activity practice – 20 credits, the final project – 8 credits. The additional subject is physical training.

The study programme scope, subject units, group composition and amounts correspond with the paragraphs 5, 19, 20, 21, 22, 23 of the General Regulation of Technological (Engineering) Science Field. In the programme structure the duration of studies is 6 terms (8 terms for part-time studies). The scope of every term is 20 credits, for part-times studies – 14-16 credits.

All subjects include theoretical classes, practice and individual works. The contact hours at day-time studies (theory and practice) are 2511 hours, for the part-time studies – 856 hours. At day-time studies for the theory 1210 hours are allocated, for practical works – 1301 hour (the regulation chapter 18). For the part-time studies the theory comprises 344 hours, practice – 512 hours. The course designing is performed in 4 subjects. The programme structure involves 2 groups of alternative subjects. In the third and fifth terms the students may choose 3 optional subjects. The studies are completed with the final project.

From the presented information seems that programme structure and subjects volumes are sufficient, and it is approved within meetings at site visit time from all parties.

### *2.1.2. Consistency of the study subjects*

For the determination of study scope, the learning outcomes and study aims are analyzed. Then the subject list for the implementation of study aims is made. In accordance with the study aim scope and the amount of subjects for their achievement, the amount of subjects in credits is determined. The scope of credits reaches from two to seven credits. The study aims are implemented by one subject or the implementation of one study aim involves from 2 to 4 subjects. The number of credits is checked by the amount of topics, practical works and course papers allocated for the implementation of the subject aim. Relations between study subjects and learning outcomes presented at 2.1.4 table, 3.1 and 3.5 appendixes.

So in general consistency of the study subjects is sufficient and presented all needed possibilities. However the question of strengthening the issue of the teaching of foreign languages English and Russian might need a more elaborate offer in this field

## **2.2. Programme content**

### *2.2.1. Compliance of the contents of the studies with legal acts*

The programme content is structured in accordance with the activity fields, competences and learning outcomes, named in the General Regulation of Technological (Engineering) Science Field and the Civil Engineer Training Standard. According to the regulation, more than 6 % (8 credits) of study programme scope are allocated to the general education group, for theoretical basic engineering subjects (“Mathematics” and “Physics”) 12 credits are given, for social science subjects – 6 credits, for special education subjects – 54 credits, for practical training – 20 credits, for the preparation of the final project – 8 credits, 5 % (6 credits) are allocated for optional subjects. The programme content provides all conditions to satisfy the requirements, named in the General Regulation of Technological (Engineering) Science Field and the Civil Engineer Training Standard. ...

### *2.2.2. Comprehensiveness and rationality of programme content*

In accordance with programme aims and learning outcomes, the subject aims, which influence the subject content, are formulated. The detailed content and scope of subject topics

are structured, considering the conditions for learning outcome implementation and adequacy to modern topicality.

The following forms of teaching are employed in the learning process: lecture (for all subjects), seminars (“Philosophy”, “Law”, “Professional Communication” and others), laboratory works (“Materials science”, “Electrical Engineering”, “Physics”, “Geodesy”, “Construction Calculation Basics”, “Information Technologies”), practical works (“Engineering Graphics”, “Special and Computerized Drawing”, “Building Constructions”, “Construction Engineering Systems”, “Technologies of Repair Works”, “Rating and Estimates” and others). Great attention is paid to consultations. The variety of study forms and methods provides the possibilities to organize the student-centred learning and helps the students to achieve the planned learning outcomes.

How ever there were missing more close cooperation and different forms of joint study between part time and full time students. It is very important to find any opportunities for cooperation between these two groups.

Also there missing possibilities for students to work in groups within preparation joint projects. Even cooperation between different study programs within preparation some joint projects would be an advantage for the studies results improvement.

Also the issue of strengthening the teaching of foreign languages is expressed in general recommendations at the end of this report.

### **3. Staff**

#### **3.1. Staff composition and turnover**

##### *3.1.1. Rationality of the staff composition*

There are 35 teachers in the study programme “Civil engineering”, 29 of them are permanent, 6 are invited and 9 are technical employees (appendix 3). All teachers have Master’s degree or the corresponding degree qualification in the studies trend “Construction”. 4 teachers are permanent and 3 teachers who have scientific degree (Ph.D.) are invited. It makes 20% of all teachers’ staff teaching the main study programme “Civil engineering” and corresponds to the general regulation in the field of technological (engineering) studies item No 28. It is noted that the study programme ‘Civil engineering’ is taught by 15 (51,7 %) persons who have no less than 3 years of practical experience in the trend of the study programme “Construction” (Table 2.3.1).

The in- service training of the staff is performed according to the staff in-service training regulations within KTC director’s order 2004-08-31 No V1-156 certified in 2004. The teacher in- training centre organizes qualification development according to the plan confirmed by the dean (select the training location, period of time for training, control the teachers attendance) the deputy director for the academic activity controls this field.

In KTC Number of students for one teaching teacher ratio since 2006 has satisfied the standard foreseen by the law of the Lithuanian Republic Ministry of education and science (Table 2.3.3) and was from 11 to 14. The supervisor who is responsible for final project has no more than 8 students.

At present there is a list of teachers working in the KTC faculty of civil engineering and they have their in- service training in non- formal way in the period of 2005-2009 (Table 2.3.2).

29 (82,9 %) teachers are permanent out of 35. Other teachers comprise 17,1 %. It satisfies the law on higher education, article 7, item 6.

The pedagogical post comprises 1584 hours. The contact hours are planned of them in a following way: for junior lecturers– 800-850 h., lecturers – 700-750h., docents – 600-650 h. The remaining post hours are left for scientific methodological work.

9 technical posts are meant for the KTC faculty of civil engineering programme “Civil engineering” performance. They help to perform the realization of the study programme: take part in performing practical and laboratory tasks, take care of and maintain tools, equipment, help teachers to layout methodological and research material, print it at e- access <http://rapolas.ktk.lt/>, provides proper computer work, install new progressive programmes, get acquainted teachers with them and give consultations using new programmes for teaching study courses. All teachers and students have opportunity to ask for help technical staff.

So in general the distribution of teachers workload is correctly stated, but the amount of real applied research is at the moment quiet low. The existing attempts to strengthen this field have to be continued and expanded.

### *3.1.2. Turnover of teachers*

One teacher was engaged to work in 2005, one was engaged in 2006 and one was dismissed, in 2007 two teachers were engaged and one dismissed, three teachers were engaged in 2008, two were dismissed, and in 2009 four were engaged and five were dismissed. ...

The teachers' alteration does the positive influence on the quality of the study programme realization. New engaged teachers are younger and have already had practical and pedagogical work experience. In the years of 2008 and 2009 six dismissed teachers were of the retirement age out of seven dismissed. At the same period of time five employees were engaged and their age was 30- 35 years old, one teacher was 46 years old and one not permanent employee was 60 years old. The working teachers increase their pedagogical and subject qualification constantly (Table 2.3.2).

## **3.2. Staff competence**

### *3.2.1. Compliance of staff experience with the study programme*

Qualification of pedagogical staff is evaluated and developed following the KTC regulations of pedagogical qualification development.

Five permanent teachers (17,2 %) have the experience of pedagogical work up to 5 years. Twenty four permanent teachers (82,8 %) have the experience of pedagogical work no less than 5 years, four of these teachers (16,7 %) work from 6 to 20 years, twenty teachers (83,3 %) have the experience of pedagogical work more than 20 years. One teacher out of other six (16,7 %) has the experience of pedagogical work less than three years, and two teachers (33,3 %) have the experience of pedagogical work of 3 years and three teachers (50 %) have the experience of more than 20 years. Additional information presented at Appendix 1 and 2

There was presented that teachers have their individual skills developments plans and every five years evaluation process is going.

How ever within presented information and site visit there were presented only few examples of applied research. So the scope of teachers' research (art) activities and correlations with the study programme seems too little, and this needs to be strengthened in the future.

### *3.2.2. Consistency of teachers' professional development*

The teachers who teach in the study programme „Civil engineering” published 19 articles on the whole with KTC assignment and no review in the Conference materials of Lithuania (in 2006 – 11, in 2008 – 7, in 2009 – 1) and 10 in the reviewed conference materials of Lithuania (in 2006 – 1, in 2007 – 2, in 2008 – 5, in 2009 – 2). Apart from this in the years of 2005-2009 29 articles of the teachers who worked in the KTC Construction faculty were published with assignment to KTU, LAU, VGTU (in 2005 – 3, in 2006– 10, in 2007– 9, in 2008 – 5, in 2009 – 2). The teacher's participation in the scientific activity, publication of science-applied materials ensures the development of teacher's qualification, creates favourable conditions for the information and construction engineering the innovation implementation, perfection and renewing of the taught courses...

At the page nr.20 stated that these activities of the teachers are closely connected with the courses of the study programme “Civil engineering” and help to improve the experience in management, increase their interest in the innovative technologies, strengthen didactic abilities of the teachers, develop general pedagogical qualifications, and increase the effectiveness of the study programme “Civil engineering” realization. However from presented information seems that there were no systematic sufficient contacts of teachers with the social partners with business for teachers practical experience new developments. Ities, what needs to be improved in the future.

Recommendation. Needs to be improvements for new innovative methods of teaching and new construction technologies also some background of IT and Communication use in Construction for virtual modeling, more knowledge within new energy efficiency construction and design models, environmental, waste treatment, renewable and so on.

#### **4. Facilities and learning resources**

##### **4.1. Facilities**

###### *4.1.1. Sufficiency and suitability of premises for studies*

While implementing the study programme, lectures take place in the main building of Kaunas technical college and in the lecture halls and Materials science laboratory that are in the dormitory.

The facilities of Kaunas technical college ensure the implementation of study programme for 100 % (Table 2.4.1). During the lecture the number of students does not exceed the number of work places in the classroom. The number of students usually does not exceed 30; the number of work places is 30 or more. The number of work places in Estimate calculation classroom, Drafting rooms, Electrical engineering, Materials science, CAD classrooms is less than the number of students, because these subjects are taught in subgroups. Number of work places for studies presented at table 2.4.1 and from the site visit seems sufficient.

The number of work places in library and reading hall is sufficient, considering the number of present and future students. In the reading hall there are 43 work places, 13 of them are computerized, that meet the work safety and hygiene requirements. Hours of reading hall attendance is from 8 a.m. till 4 p.m.

However during site visit and meeting with different stakeholders (mostly by students) were defined that some facilities (WC – very old facilities, library – some material was in different locations and it takes some additional time to get information, some IT facilities – are old) needs to be improved.

From presented information seems that the library attendance time was not sufficient, but within site visit it is presented that library attendance time is already extended till 7p.m. And it is working at Saturday till 3p.m.

At site visit it is presented that modernization of facilities were planning in nearest future and additional financing already allocated from structural funds and within internal college budget.

###### *4.1.2. Suitability and sufficiency of equipment for studies*

Students have possibility to make individual work after their lectures. In the CAD laboratory students can make individual work for building structure, structure calculation, construction work technology, work organization subjects and to prepare the final project. In the estimate calculation classroom students have possibility to make estimates using “Sistela” programme, to make drawings individually with computer aided design programme AutoCAD, in the information technologies room - to use computers.

There were possibilities for students use some IT facilities from dormitory, but no access from other places. Also there were no possibilities to use different software from outside.

So in general computer hardware and software are sufficient, but the remote access to learning resources should be improved, especially from outside see recommendations.

#### *4.1.3. Suitability and accessibility of the resources for practical training*

During the studies students have Cognitive, Geodesy, Construction work technology, Industrial and Final practices

Described resources allocated for practical purposes looks enough to practice within some part of needed experience.

So Compliance of activities of the institutions for practical training with the aims of the studies seems Is sufficient.

Ratio of suitable practical training places with the number of students Is sufficient.

The institution takes the necessary steps to establish a good quality for sites for practical training and makes sure that there are sufficient sites available. This was approved within site visit meeting with employers and students.

## **4.2. Learning resources**

#### *4.2.1. Suitability and accessibility of books, textbooks and periodical publications*

The main literature necessary for studies is available for students in the college library – reading hall. The college has signed a cooperation agreement with Kaunas University of Technology and students have a possibility to use the university library and reading hall. There is a cooperation agreement with Public library of Kaunas district to have a possibility to order publications that students can read in the college library-reading hall. The changes of books that are purchased by the college are presented in Table 2.4.3. Also within Appendix 1 it is presented literature related with different subjects.

Presented amount of references seems Ok, but for different subjects, some references needs to be revised, as they are old or missing new. Example within facades together with energy efficiency questions missing noise protection regulations. Also subject “CONSTRUCTION WORK TECHNOLOGY” T230 B097, T230 B098 Reference to Construction rules – 2003; (very old and not valid) needs to be revised every 5 years and to be related with valid regulations). Suggestion would be to make relation with [www.statybostaisykles.lt](http://www.statybostaisykles.lt).

So in general provision with printed publications required for the study programme Is sufficient. But there could be more publications in foreign languages.

Access to methodological publications is sufficient.

#### *4.2.2. Suitability and accessibility of learning materials*

The college has signed a cooperation agreement with Kaunas University of Technology and students have a possibility to use the university library and reading hall. There is a cooperation agreement with Public library of Kaunas district to have a possibility to order publications that students can read in the college library-reading hall....

Ensuring the study quality students have a possibility to use learning resources that are developed by teachers – compendiums, laboratory and practice descriptions, methodical recommendations, books, methodical guidelines for individual work. During the assessed five year period 91 % of methodical resources is updated or prepared new ones for all the taught subjects (Table 2.4.5). Methodical resources are prepared: 100 % for engineering studies basics, 67 % - for professional practice activity, 50 % for practice, 100 % for optional subjects, and 100 % for general subjects

Students have possibility to use methodical resources studying general subjects, engineering basics or special subjects. Possibility to use printed materials, e-storage in CD format is provided in library, reading hall, methodical classrooms, and possibility to use e-access - (<http://rapolas.ktk.lt/>) the Internet is provided with stationary IT network or wireless. KTC students have a possibility to work in computerized work places in methodical classrooms, classrooms or reading hall during their free time (Table 2.4.6).

To ensure the possibility to use necessary methodical sources in Public library of Kaunas district, Kaunas technical college has signed an inter-library delivery agreement.

Within self assessment it was shown that attendance to library was only from 8a.m. to 4 p.m.. Within site visit it was presented that this hours were extended till 7pm on Monday – Friday, and till 3pm on Saturday.

The different list of digital forms of literature were presented at site visit is sufficient. This was also approved with meeting with students.

How ever the remote access to learning resources should be improved, especially from outside see recommendations

## **5. Study process and student assessment**

### **5.1. Student admission**

#### *5.1.1. Rationality of requirements for admission to the studies*

The line of the best graduates for particular study programme is made depending on the final secondary school examination results that are evaluated according to the criteria set by the minister of science and education. A person is admitted to a particular study programme according to his/her request, the examination result and position in the line. People who intend to study using his/her own funds may enter the college according to the college contest requirement line order. The order is identical to the order that is applied to people who intend to study with state funds. People with secondary education may apply to “Civil engineering” study programme. Competitive mark comprises marks from secondary school certificate and (or) its appendix marks. Competitive mark: secondary school examination – mathematics (0,4), physics (0,2), native language – Lithuanian (0,2), English – (0,2).

Marks for additional criteria are given for: prizemen of international Olympiads and competition, prizemen of country Olympiads and competition, for people who have graduated the same study programs with citation, for people who have the graduated professional study programmes of the same field and have work experience according the acquired qualification not less than 1 year.

No any social requirements for applicants to Construction study programme are stipulated.

#### *5.1.2. Efficiency of enhancing the motivation of applicants and new students*

„During the last 5 years the competition for “Civil engineering” study programme was sufficient. The largest competition was in 2009 with 476 applications“.

Also the motivation of future and present students is intensified implementing 2007-2009 year marketing programme. A group of study programme publicity and popularization is organized in Kaunas technical college. This group is confirmed by the College director each year. The group consists of students and teachers. One of the target groups, that are given particular attention, is the graduates of secondary schools, gymnasiums, professional training schools, students of higher education. The main activities of the group are: information spread in press and online, direct communication with interested groups in specialized exhibitions, during visits to secondary and professional training schools, organization of seminars and conferences for carrier consultants, organization of study fairs, open days, cognitive excursions to companies. During the events schoolchildren, their parents, carrier consultants are presented with the information about study programme aims, structure, acquired competences, employment abilities, admissions procedure, and general study requirements, events that are organized for schoolchildren in the college, further training and free time activities.

The college takes the necessary measurements to enhance the motivation of the students.

### **5.2. Study process**

#### *5.2.1. Rationality of the programme schedule*

Schedule of the study classes is Consistent and fit to regulations for Lithuanian Institutions for higher Education. Schedule of the examination session is consistent.

#### *5.2.2. Student academic performance*

During the assessed period full-time studies were graduated by two graduate groups. The number of entered students – 120, the number of graduates – 95 (“drop-out” 24,2 % of students). There was only one graduate group of students in part-time studies. The number of entered students – 62, the number of graduates – 29 (“drop-out” 53,2 % of students). This shows that the number of “drop-outs” in part-time studies is twice larger than in full-time studies. But the Tables 2.5.2 and 2.5.3 reveal that the number of full-time “drop-outs” is increasing and the part-time “drop-outs” are decreasing.

At the faculty monitoring of student progress and drop-out rate is implemented on a constant basis. Monitoring and analysis of student mobility and its reasons are performed permanently.” This was made evident during the visit.

There were only few initiatives presented about students’ participation in research activities within site visit approved both by lectures and students. However this area needs to be improved in nearest future. Even if employers expressed that within there problems arise they more welcome to ask for solutions to Universities, some solutions needs to be founded at college also.

#### *5.2.3. Mobility of teachers and students*

Mobility of teachers presented in tables 2.5.4-6 and seems low. From 2005 to 2009 4 lectures and 4 students participate in mobility programs. Only 1 incoming lecture was presented in report. Not only the outgoing students are a problem, there are no students arriving from abroad. The main problem was expressed differences between programs and English language level.

So in general teacher and student mobility is insufficient but it has a tendency to increase. Kaunas technical college entered into cooperation relationship with Leipzig University of applied sciences (Germany) and Horsens VIA University College (Denmark). Also within site visit it is presented on going preparation of join program with Horsens VIA University College.

### **5.3. Student support**

#### *5.3.1. Usefulness of academic support*

There is a web page “Student Support“ on the KTC Intranet. Students can find applicable laws, regulations, and statute, examples of title- pages, settlements, information about SKSG group (students’ consultation and self development group). Students can find the methodological material of taught courses on the Internet electronic media page <http://rapolas.ktk.lt/>

Student counselling on study issues is sufficient.

Student counselling on career possibilities is sufficient.

Possibilities to study according to individual programme are sufficient.

Possibilities of students to repeat subjects and to retake examinations are sufficient.

#### *5.3.2. Efficiency of social support*

In accordance with regulations adopted by the director order of 2005 02 23 No V1-127 students can get grants depending on their study results. There are 4 kinds of incentive grants: basic– 1 BSI rate (130 Lt.), minimal – 0,4 BSI rate (78 Lt.), faculty– 2,0 BSI rate (260 Lt.), college – 3,0 BSI rate (390 Lt.). The grants are awarded taking into account the student’s results of the previous semester by the dean’s provision and the director’s order...

Psychological, sports, health and cultural support is sufficient and approved during site visit.

Grants and benefits are sufficient.

Provision with dormitories is sufficient, however dormitories need to be modernised.

## **5.4. Student achievement assessment**

### *5.4.1. Suitability of assessment criteria and their publicity*

Student learning outcomes are examined in accordance with the settlement of the study subject's regulations. Students' knowledge, abilities and skills are tested consistently in the intermediate subject/module settlement. Studies during the interim settlement in the form and number will depend on the subject objectives and scope. Total course of acquired knowledge, skills is evaluated during the examination. The department head adopts test targets. The results of the assessment are applied to the cumulative and clear points system....

The college teachers have developed a reference work of the subjects, coursework projects and examinations of assessment methodologies, which specify what kind of subject matter and objectives of their achievement level (high, medium, minimal, unsatisfactory), are available in case of the written test, prepared the course project or the passed examination.

Publicity of assessment criteria is fulfilled.

### *5.4.2. Feedback efficiency*

Teachers evaluate the students with comments that indicated failings. Every teacher interviews students in order to assess the quality of their teaching course and content. Assessing the students' opinion, the course is adjusted to the content and teaching methods of approach.

### *5.4.3. Efficiency of final thesis assessment*

Preliminary final works topics are discussed at the department meetings and are presented to the students during the last autumn semester of studies. The students have the possibility to choose the topic and the supervisor of the final project work.

Final project tasks and their level of implementation are ascertained in the protocols of the qualification commission and in the reports of the commission chairman which contains the final remarks and suggestions for the improving the final project preparation tasks.

College final projects are developed in accordance with the general requirements of the Ministry of education and the College documents regulating the project preparation order.

During the final year of studies students are introduced to the final preparation procedures, methodological guidance, assessment provisions. Lectures and consultant from business site allocated for different parts of final work.

So it could be stated that requirements for final thesis are clearly stated. Procedure of final thesis assessment is clearly stated. And results of final thesis assessment are clearly presented.

### *5.4.4. Functionality of the system for assessment and recognition of achievements acquired in non-formal and self-education*

Currently, the college does not support non-formal education

## **5.5. Graduates placement**

### *5.5.1. Expediency of graduate placement*

From the year 2005 to 2008 after completing their studies successfully employed from 72% to 92 % graduates, and from 50% to 94% of them were employed in their profession. Only in recent years (2009) the employment in the profession failed drastically to 20% and 50% in their profession. The main reason of the failed employment is the oppressive economic crisis in the country." How ever from employers was stated that in nearest future it will reasonable and hopefully increasing with estimated economical growth.

Correlations of graduate professional activity with the study programme is sufficient. That was approved by employers at site visit.

## **6. Programme management**

### **6.1. Programme administration**

#### *6.1.1. Efficiency of the programme management activities*

The implementation of the study program “Civil Engineering” is managed by the study program committee. Adopting the decisions, dealing with the program implementation and administration the formal management structures interact with the program committee.

The KTC Assistant Director for academic work initiates and administrates the implementation of the requirements for the study program accreditation, initiates and approves the structuring of new programs and the improvement of the existing ones.

The Faculty Dean administrates the development of the existing, new and compensatory study programs, develops the projects of new study programs and presents them to the assistant director for academic work to approve. The Head of the department provides the suggestions for the program development and improvement, initiates the application of new teaching/learning methods, plans and organizes the department staff’s methodological work, coordinates and confirms the programs of subjects, coordinates the topics of diploma projects and course papers, administrates and evaluates the teacher and technicians’ quality of work, administrates the implementation of study program subject aims, administrates the quality of practice performance and analyzes the process of graduates’ employment.

With the start of every academic year the Head of the department presents the report on the results of the previous year at the Directorate meeting, the Faculty Dean – at the Academic Board, the Assistant Director for academic work – at the Constituent Council.

The decisions at the Study Program committee are adopted by the simple majority. The meetings are open. The experts, the authors of study modules (subjects), the members of academic and faculty boards, the representatives of the administration and the deanery may be invited.

So in general program management activities seem to be efficiently carried through. However there seems to be limited team work between staff. It is advised that this issue should be addressed and a programme to enhance team work between the staff and the flow of information should be implemented.

### **6.2. Internal quality assurance**

#### *6.2.1. Suitability of the programme quality evaluation*

The college has made a partial and complete programme of the study quality assessment. The partial implementation of the programme of the study quality assessment is carried out every year at the annual performance evaluation of teachers' work activities in accordance with BS EN ISO 9001:2000 standard PR 6.2-01 "Staff Administration" procedure. The teachers’ annual activities are discussed in the department meeting, and later the head of the department evaluates them. The Faculty Academic Board approves the decision of the department and the College Academic Board approves the Faculty Board’s decision.

The studies programme is assessed performing the internal management. LST EN ISO 9001:2000 standard PR 8.2-01 „Internal audit”. The faculty and college administration, municipal authorities, students and teachers, representatives of the labour market and external experts from academics take part in the programme evaluation.

In general, evaluation as a regular process is established and efficient. Preparation of evaluation parameters, methods and aids, publicity of evaluation process and results is sufficient.

#### *6.2.2. Efficiency of the programme quality improvement*

The evaluation results feed back into each year quality improvement plans. The quality improvement plans are drawn up in different arenas: teachers, faculty, and department. Before the preparation of each level of the quality improvement plan, strong, half-improvement

activities are defined, improvement of access is established, and predictable potential barriers are foreseen.

### *6.2.3. Efficiency of stakeholders participation*

Students know quality system and they participate in quality improvement by expressing their opinion in various questionnaires and interviews, in the directorate, academic and constitutive board meetings. However these activities is insufficient and it should be improved – the independent student participation in the study programme “Civil engineering” quality improvement should be activated. Seems that Students Union activities were not strong and well organized at the college. Even at site visit students were represented only by group leaders, but no representatives from student union participate.

Student group tutors collect information about graduate employment in 6 months period after graduation. This information is useful motivating the need and high quality of study programme.

External social partners are widely involved and actively participate in “Civil engineering” study programme implementation: the contracts are signed with construction organizations and students have possibility to have practice in these companies that are certified leaders in the construction field and perform large construction work. During these practice employers have a possibility to evaluate student training – students are offered a job after the practice in the company. The meeting with the employers confirm: graduates are in great request in the labour market; their competence meets the employers’ requirements.

The signed contracts and employers’ support (part of them is college graduates) help to reconstruct study facilities and laboratory equipment.

Employers representatives actively participate in study programme’s State qualification commission activity: one of the employers’ representatives is the chairman of the State qualification commission, others are committee members. Good programme quality assessment is based on the Diploma project evaluation aspects, positive changes are stimulated by the commission members’ presented improvement aspects. Employers review subject programmes, give seminars, where college teachers are presented with modern technologies, allow teachers to develop their professional competence in their companies. However, closer cooperation between employers and college regarding research activities should be improved.

## **III. RECOMMENDATIONS**

1. Important part to implement more student team work within joint works, were further focus should be put on Construction integration with Building engineering systems. Also virtual modelling background should be introduced within these studies with practical experience.
2. The panel did not meet any of the part time students which were felt as unfortunate in order to seek their opinions and comments regarding the course. It is also felt from meeting with the staff that there is no interaction between the full time and part time students within study period. It is strongly recommended that this is taken into account to facilitate some joint lectures/tutorials, home works, even final works or meeting between the two groups in order to let the two cohorts to share ideas and discuss issues related to their studies.. Also it will be good if each P/T can be assigned a personal tutor so that he/she can have a point of contact within the college.
3. Beside the given orientation toward practical knowledge, the programmes have to strengthen the scientific development of students, for their further learning activities (Lifelong learning).
4. There is a good awareness of the need for foreign languages in the college. It is considered that currently English is a more global language and there is a need to develop toward the goal of teaching English more globally and also more technical language to all students within the college to improve their chances of being able to communicate with foreign contractors within and outside Lithuania. This was also reflected during the students’

- meeting where they expressed the need for more foreign language tuition especially English. This was also reflected in the meeting with the Social Partners as they did emphasise the importance of foreign languages especially English and Russian.
5. Staff and students mobility has to be increased with special initiatives. This is a general problem within the evaluated programmes in Lithuania and therefore nationwide actions should be initiated
  6. More clear and formalized procedure for the renewal of the practical experience of staff needs to be established in the programme. New technologies search and implementation in study programs together with social partners should be introduced.
  7. The existing pedagogical approaches have to be systematically evaluated within the school. Also recommendation of investigation what forms of new methods of teaching and assessment should be introduced.
  8. A conclusive agenda of real applied research has to be established and the transmitting into the teaching process needs to be established and assessed on a regular base.
  9. There seems to be a lot of good practice done at the college and the panel had very positive responses from the students. However it is felt that there is not much interaction between the staff and they do need to perform as a team rather than individuals. Therefore the panel encourages staff away days in order for the staff to have joint discussion and collaborations in research and work practices also involving students.
  10. The Panel would like to see more college activities within involvement with the Social Partners so that they can more active contribute to assessment of course and curriculum developments, ordering and participating in applied research activities, join projects with business site and so on.
  11. Also from site visit, seems that Students Union activities were not strong and well organized at the college. Even at site visit students were represented only by group leaders, but no representatives from student union participate. It is strongly recommended that student union activities should be improved within more active participation in study programs evaluation and improvements development, also active participation in college management and decision making activities, different research projects initiation, mobility programs organization and other college activities.
  12. It is encouraging to see that there are already made some investment also are plans to invest into improving the IT facilities and some laboratory facilities within the college. However the students wanted some investment in renovating the general infrastructure of the college including buildings, toilets and also IT facilities were mentioned. This was also noticed during the tour of facilities. It is encouraged to develop more remote access of software to students from outside college and dormitories, which will be very beneficial to all students and especially the part time ones. The panel were informed that there is a plan to upgrade the IT facilities, but were not very clear with regards to buildings. Therefore it is recommended that if possible this issue needs to be addressed.
  13. The library facility has all the required elements to facilitate references to students. However it is felt that there is room for improvement and perhaps a larger space can be dedicated to this facility. Especially important to provide all college library material to allocate in one place, extend working time, to improve accessibility of different sources from mobile sites and so on. Also more new specifically specialised books in English and Russian languages should be made available. More information about newest technology development tendencies should be introduced including (energy efficiency, renewable energy resources in buildings and energy networks, new technologies developments, new materials developments and introduction in market, virtual building modelling, ITC in construction and so on)

#### IV. GENERAL ASSESSMENT

The study programme *Building* (65302T101) is given **positive** evaluation.

Table. *Study programme assessment in points by evaluation areas.*

No.	Evaluation area	Assessment in points*
1	Programme aims and learning outcomes	4
2	Curriculum design	3
3	Staff	3
4	Facilities and learning resources	3
5	Study process and student assessment (student admission, student support, student achievement assessment)	3
6	Programme management (programme administration, internal quality assurance)	3
	<b>Total:</b>	19

\*1 (unsatisfactory) - there are essential shortcomings that must be eliminated

2 (poor) - meets the established minimum requirements, needs improvement

3 (good) - the area develops systematically, has distinctive features

4 (very good) - the area is exceptionally good

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