STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Alytaus kolegijos

STUDIJŲ PROGRAMOS *STATINIŲ INŽINERINĖS SISTEMOS*

(valstybinis kodas – 653H24002)

VERTINIMO IŠVADOS

EVALUATION REPORT

OF *BUILDING ENGINEERING SYSTEMS*

(state code – 653H24002)

STUDY PROGRAMME

At Alytus College

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Išvados parengtos anglų kalba
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Statinių inžinerinės sistemos***
Valstybinis kodas	653H24002
Studijų sritis	Technologijos mokslai
Studijų kryptis	Statybos inžinerija
Studijų programos rūšis	Koleginės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	Nuolatinės (3), ištęstinės (4)
Studijų programos apimtis kreditais	180 ECTS
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Statinių inžinerinių sistemų profesinis bakalauras
Studijų programos įregistravimo data	2008-03-17

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Building Engineering Systems***
State code	653H24002
Study area	Technological Sciences
Study field	Civil Engineering
Type of the study programme	College type studies
Study cycle	First
Study mode (length in years)	Full-time (3), Part-time (4)
Volume of the study programme in credits	180 ECTS
Degree and (or) professional qualifications awarded	Professional Bachelor in Building Services Systems
Date of registration of the study programme	17-03-2008

CONTENTS

I. INTRODUCTION

1.1. Background of evaluation process

The evaluation of on-going study programmes is based on the **Methodology for Evaluation of Higher Education Study Programmes,** approved by the Order No 1-01-162 of 20th December 2010 of the Director of the Centre for Quality Assessment in Higher Education (hereafter, SKVC). 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 the Self-evaluation Report prepared by a Higher Education Institution (hereafter, the HEI); 2) a visit of the Review Panel at the higher education institution; 3) preparation of the evaluation report by the Review Panel and its publication; 4) follow-up activities.*

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

The programme is **accredited for 6 years** if all evaluation areas were 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 SKVC. Along with the Self-evaluation Report and Annexes, the following additional documents have been provided by the HEI before, during and/or after the site-visit:

No.	Name of the document
1.	Quality Assurance Manual
2.	Minutes of Meetings of all programme related committees
3.	Teacher's annual professional competence improvement plans

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

Alytus College is the state institution of higher education in South Lithuania region. Alytus College was established in 2000 with adoption of the new Law of Higher Education. The faculties of Management and Engineering, Information and Communication Technologies organize and implement the process of research and studies according to the study areas in order to achieve the study goals and assure proper quality of studies.

The study programme of Building Engineering Systems (BES) was launched at Alytus College in 2008, under the study area of Technological Sciences (study field of Civil Engineering). The programme is implemented under the Management and Engineering Faculty.

The content of the study programme has changed taking into account the labour market conditions, that adopted regulatory acts and documents. The programme was assessed by an international team in 2013 and was accredited for a 3-year period.

The study programme offers the degree of Professional Bachelor in Building Services Systems.

1.4.The Review Panel

The Review Panel was composed according to the *Description of the Review Team Member Recruitment*, approved by the Order No 1-01-151, 11/11/2011 of the Director of the Centre for Quality Assessment in Higher Education. The visit to the HEI was conducted by the Panel on 29th of November, *2016*.

1. **Assoc. Prof. George Markou (Chair of the Team)**
   Associate Professor at ALHOSN University, United Arab Emirates.
2. **Assoc. Prof. Andrus Aavik**
   Associate Professor at Tallinn University of Technology, Estonia.
3. **Assoc. Prof. Liga Gaile**
   Associate Professor at Riga Technical University, Latvia.
4. **Assoc. Prof. Vincentas Vytas Stragys**
   Vice Chairman at Lithuanian Association of Civil Engineers, Lithuania.
5. **Tautvydas Šimanauskas**
   Masters student at Kaunas University of Technology (Building Services System field), Lithuania.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The Building Engineering Systems (BES) programme of the Alytus College (AC), states within the Self-Assessment Report (SER) that its main aims are to ensure that its graduate students acquire both theoretical and practical ground as well as necessary skills for the work of a building engineering systems specialist. The programme also aims to provide its students with the ability to apply technology and scientific knowledge, implement projects and management of technological processes. Furthermore, the programme aims to deliver graduates that will be able to design and install modern building engineering systems, manage the organization and execution of their maintenance and repairs, organize a business company's activities and develop the general skills necessary for formulation and reasoning for the solution of civil engineering related problems. The new programme aims description is well defined but this information was not available on the website given that the BES link was not working (4th Nov. 2016). This was also confirmed during the visit. It is recommended to improve the English translation of the main aims so as to make them clear to future foreign students and construct the English version of the programme's web page.

The BES programme developed 9 new programme learning outcomes that are targeting in achieving 5 main study cycles of learning outcomes, which are in line with the Lithuanian Qualification Framework. The number of PLOs is ideal, while the RP recommends the assignment of a code to each PLO so as to be able to use them in a compact manner within tables (especially within Syllabi and Instructor Reports).

Furthermore, the RP's analysis found that the element of the "life-long learning" was not included in a clear way within the new PLOs. As a part of the BES students' education that will fortify them for the rest of their life, the element of the life-long learning ability should be a fundamental part of their curriculum and an acquired skill that will help them evolve as professionals thus update their knowledge as technological advancements evolve through time. This has to be integrated as well within the course activities that will satisfy this specific skill that should be included within a PLO.

The BES programme is not the only building engineering systems programme offered in Lithuania, given that a similar BES study programme is carried out in other Colleges. According to the RP's assessment, Lithuania's economic development requires to be supported by additional investment in its human capita and support the development of its growing society.

This can be achieved by investing in the academia that will help with the constructive development of the society. Therefore, the two BES study programmes can further contribute to the Lithuanian society and further improve through healthy competition, given a proper support from the government.

The AC BES programme learning outcomes are developed according to the professional needs and take into consideration the industry market's needs. The recent update of the learning outcomes of the programme integrated the suggestions of the social stakeholders thus accounts for the needs of the labour market.

According to the Lithuanian Qualification Framework (Level 6), the aims and the programme learning outcomes are consistent with the type level of studies and qualifications offered by the programme.

The name of the programme *(*Building Engineering Systems) is compatible with the name of the field of study and the programme learning outcomes are compatible with the qualifications offered. The BES programme learning outcomes and course matrix is provided in Table 3 (page 12 of the SER), where the mapping can be depicted. The RP recommends that this Table should be updated by taking into account that the Final Practical Training course, is a course that should cover most of the study programme outcomes and the Final Project should also be included in the Table in order to achieve a spherical view of the PLOs balanced mapping to courses. Practically, courses should not be correlated to more than 5 PLOs, except from Internships and Thesis/Final Projects. Furthermore, it is recommended that the courses vs PLOs mapping should be performed through a matrix that should include all courses offered by the programme (including the Alternative/Elective courses offered by the BES programme). Finally, as it can be seen from the current mapping (in Table 3 of the SER), PLO 8 is connected to 9 courses while PLO 9 is connected to 22 courses within the table. The mapping is not balanced, therefore, it is recommended to further update the mapping.

2.2. Curriculum design

The programme *Building Engineering Systems* with a total volume of 180 ECTS complies with the Order of the Minister for Education and Science of the Republic of Lithuania "General Requirements for the First Degree and Integrated Study Programmes" (9th April 2010 No V-501). The programme is delivered for full-time (3 years) studies and part-time (4 years) studies with equal subject volume. It was also found that the number of course units per semester is not

more than seven. General subjects have a volume of 15 ECTS that comply with legal requirements. Also the subjects of the study field have 159 ECTS and the Final Thesis has 12 ECTS, therefore, fulfill the legal requirements of 135 ECTS and 9 ECTS, respectively. From the study plan it can be depicted that each of the course units' end with an exam or final project, while the practical training with 30 ECTS takes place at the senior level.

Study subjects are spread evenly (30 ECTS per semester for full-time programme and 24 ECTS or 21 ECTS for part-time programme) and their themes are not repetitive. According to the Study Plan (Annex 3.1) and Table 2 of the SER, contact hours make up to 41% of the studies (which includes lectures, practice and consultations). When excluding the general subjects and social sciences, the contact hours drop from 41% to 39%, thus decrease the proportion of contact hours for the key study field subjects. The RP found that the theoretical lecture volume is only 7% of the total study volume in contrast to the 10% stated in the SER. It is deemed necessary to increase the proportion of theoretical lectures to enhance student understanding about the fundamental processes in the field of building engineering systems. Recommendations to increase the proportion of theoretical lectures were also given in the previous evaluation of the programme on 2012. Since the last programme evaluation the theoretical lectures have been increased from 5% to 7% (full- time studies) of total working hours and the full-time study contact hours have been increased from 1937 hours (40.4%) to 1965 hours (41%).

During the visit, the RP found that the academic staff tries to deliver theoretical knowledge through the practical tasks utilizing the excellent laboratories of the faculty. Potentially there is the possibility in the programme to enhance the volume of the theoretical lectures on the account of decreasing individual working hours to 50%.

Training of design skills is conducted through optional subjects where in-depth specialization is acquired (5^{th} and 6^{th} semester) and can be considered as good practice.

Generally, the content of the subjects is consistent with the type and level of the studies and also the scope of the programme is sufficient to ensure learning outcomes. Nevertheless, some improvements could be considered; for example, to better achieve the third PLO "to develop ability to perform applied research" of the study program, it is suggested to add the topics of applied research. It has been also noticed that some of the study course descriptions do not contain references or recommended literature in foreign languages and some course names in English should be specified more accurately to reflect the content of the subject. The name of the

subject “Structures and Materials” in the Study plan does not coincide with the subject name “Building and Materials” in the course description. This has to be corrected.

The content of the programme clearly reflects the latest achievements in science and technologies. The programme has adapted in a way to maximally utilize its renovated laboratories and modern equipment. It has been found that academic staff is in close relationship with the social stakeholders and upgrade course programmes according to the market trends.

2.3. Teaching staff

All the teachers, 23 in 2015/16 academic year (a/y), that are working in the Building Engineering Systems study programme have at least a Master’s degree or an equivalent higher education degree (5 of them have a Ph.D. degree). 17 teachers of the study field subjects and 6 teachers of general subjects, work within the BES study programme.

Ph.D. holders reach a 25% of the total faculty members that teach the study field subjects.

It was found that the 75% of programme teachers have at least three years of practical experience in the subject field. Teachers’ professional development data is recorded in the Quality Assurance System of the College and evaluated personally every 5 years.

The teachers-practicing professionals with at least Master’s degree supervise the professional practical training and graduation theses related to applied research performed by students in accordance with the Alytus College strategic directions, oriented towards the quality assurance of professional practical training and the execution of applied research.

Subject teachers of the BES study programme have a suitable and adequate practical and pedagogical experience (Annex 2 of SER) so as to support the programme’s implementation. In addition to that, the programme teachers are members of various professional associations, unions and societies, which utilize them to be aware of new developments in their area of expertise.

The majority of teaching staff have a very long teaching experience (only 3 teachers out of 23 less than 5 years, Annex 2 of SER), which is adequate for the staff of a professional College. The staffs’ practical experience was also found to be adequate. Students’ surveys on the quality of teaching are taking place once per 3 months and indicating that teachers are competent, qualified and meeting students’ expectations in the study process.

For individual and organizational goals achievement, the teachers have to prepare annual professional and pedagogical competence improvement plans and at the end of the year to compile the corresponding reports for assessment. Teachers have to update the content of the taught subjects following the Alytus College Regulations on Preparation and Approval of Teaching Material every three years. Teachers are participating in the reelection process to the position every five years when their qualification has to be reevaluated.

Teachers with the practical experience in the subject area supervise students' practical training. The RP established that, all practice supervisors in companies have at least a Master's qualification degree of the study field and at least three years of practical work experience in study field.

Teachers from foreign higher education institutions (Latvia, France, Turkey, Poland, Denmark, Norway) delivered lectures to students of the BES study programme in 2011–2015 and shared their pedagogical and practical experience, which had positive influence on the improvement of the content of the study programme (increase of the study quality).

According to the RP assessment, the working load and the order of remuneration is established by minutes of the Alytus College Academic Board No V3-24 of April 21, 2012. Teachers' working load consists of contact (30-70% of the total working time) and non-contact hours. One teacher has 4 students for the supervision of a final project per a/y, which is found to be a reasonable work load.

The Staff/Student Ratio is 1:3, which is very low from the economical viewpoint but very good from the student's view (getting direct consultation within and outside the class). Recruitment of full-time students has been falling for a number of years due to financial and immigration reasons. Admission of students to the BES study programme was found to be low, given that secondary school graduates do not want to undertake graduation exams that are required to be taken so as to be accepted in the programme. Part-time students' admission to the BES study programme is compensating the lack of full-time students, but this needs to be addressed by the College.

Staff turnover in the Building Engineering Systems study programme is small based on the teaching experience data provided in the SER Appendix 2. The average age of the teachers, implementing the study programme, is 48 (29% are 30-39, 17% are 40-49, 38% are 50-59 and

12% are 60 years old and over). The average age and the age distribution are deemed as satisfactory.

2 Ph.D. holders and 3 teachers were employed in the study programme prior the RP visitation (assessment period). New positions are planned in advance and there is a system in place that calls for a public competition for each position, where the candidates are evaluated based on their qualification and by using criteria of assessment that are based on the academic, pedagogical and professional activities of all candidates.

During the assessment period, it was found that the teachers have improved their competencies in various ways: carried out applied research, participated in projects and scientific work related to the BES study programme, conducted training courses and workshops, participated in conferences, seminars, training courses, internships and exchange programmes. All teachers are preparing annual professional competence improvement plans. College financial support for the teachers for conference participation is decided by the Personnel Department of the College in every individual case. That kind of system cannot assure the equal treatment of all teachers, therefore the College has to establish a transparent and understandable system of financial support towards its teachers' professional and pedagogical development.

Teachers are constantly updating their practical work competencies by maintaining very close ties with the city and the region's employers and local authorities. That tight connection between the College and social partners was clearly expressed during the RP's meeting with employers and social partners.

During the assessment period teachers (in average 8 teachers annually) participated in international internships in Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Poland, Latvia, Luxembourg, Malta, Norway, the United Kingdom, France, Portugal, Romania, Italy, Slovenia, Finland, Sweden, Turkey, Germany, and other countries. This is an evidence of good practice.

For the case of foreign visiting teachers financing, the College is applying finances from the Ministry of Education and Science of the Republic of Lithuania and also is using the Erasmus+ funds and Fulbright scholarship (2015). This is also an evidence of good practice.

The teaching staff of the programme is involved in research, which is directly related to the study programme. During the assessment period, the RP found that the teachers published 35 papers (21 papers in international scientific databases and 14 papers in other publications). The

teachers' implemented research activities had a direct influence to the quality and content of their teaching.

Teachers participated and improved their competencies in different projects implemented by the College (for example: Demand for Joint Study Programmes and Prospects of Higher Education in Alytus, Gniezno and Porto Partner Institutions; Creation and Implementation of Internal Study Quality Management System in Alytus College; Improvement of the Quality of Studies and Enhancement of Internalization at Alytus College Through Innovation of Study Programmes in the Context of the Changing Labour Market, etc.). Teachers also participated in different international programmes (European Social Fund, LLP/Erasmus +, LLP/Leonardo da Vinci (Innovation Transfer), Lithuania – Poland 2007-2013, INTERREG IIIA and INTERREG IVC), according to Annex 3 of the SER.

Teachers have provided expert services in assessing study programmes and reviewed methodological publications of teachers of other higher educational institutions.

2.4. Facilities and learning resources

The area of the premises designed for the BES study programme is 1561 m^2, 1012 m^2 of which are intended for theory studies (depending on the occupation of premises, they are also used by students of other AC study programmes), 549 m^2 are used for practical and laboratory work. All premises are suitable for organizing the process of studies according to the labour safety and hygiene requirements. All study rooms are equipped with the devices required: computers, multimedia projectors, etc. From the year 2011 to year 2015 number of students decreased from 95 to 65, therefore, the space per BES student significantly increased. It is important to note that, after the previous evaluation the premises were renewed, buildings renovated and additional labs were constructed for the needs of the BES programme. In addition to that, all premises are certified for labour safety and hygiene requirements.

For the needs of the BES programme studies, the classrooms are equipped accordingly thus students can use the following technical facilities: computerized work places, multimedia, mobile screens and magnetic boards.

The Regional Technology Centre (RTC) of the College serves optimally the BES study programme and its needs in laboratory activities. The RP evaluated the modern equipment of RTC as an example of excellence. The newly established Centre integrates among other a passive house, a geothermal heating system, solar panels, photovoltaic cells and a wind power

plant, which is the first in the city of Alytus. The RTC enables the BES programme students in acquiring stronger fundamental knowledge in engineering and its application, where they can develop research abilities in the areas of operation, maintenance, design and modernization of building engineering systems by using state-of-the-art equipment and technologies. The RP recommends that the College uses its maximum available resources in order to promote and market this laboratory in order to attract students within and outside the Lithuanian borders.

AC cooperates successfully with companies based in Alytus and other regions, in order to organize its students' professional practical training activities. During the training in different companies, students have the opportunity to get acquainted with the company's activities and environment, where they are asked to apply their theoretical knowledge and obtain professional practical skills. The time for professional training practice is scheduled in the academic calendar. 30 ECTS credits are devoted in accordance with the study plan. The students of the BES study programme choose individually the company in which they intend to carry out their practical training.

Students of all years can get registered, through websites, for their practical training, such as www.startuoju.lt and www.gerapraktika.lt. Through these websites, companies and organizations announce information on the proposed places for practical training. Students can choose from the proposed advertisements or get registered in a company database where they can be allocated by companies looking for trainees.

The College has signed cooperation agreements with 29 building services companies based in Alytus and other cities and regions, while it also cooperates with the Confederation of Lithuanian Entrepreneurs, Lithuanian Business Association and Vilnius Chamber of Commerce. This is an evidence of good practice.

In 2014 the library was complemented by a considerable amount of new publications. The College library uses different tools of information infrastructure for research and studies: BIS (library information system with software Aleph), eLABa (Lithuanian academic electronic library), ETD, PDB (Database of Publications), LVB (Lithuanian virtual library) and the system of electronic publishing of Lithuanian research and studies. The library resources are supplemented with scientific literature in foreign languages as well.

Publications for the special professional part of the BES study programme are regularly updated. The list of different books, textbooks, reference books related to the programme consists of 201

titles. The College also subscribed in scientific and technical periodicals in the area of the BES study programme. Students use free databases and e-periodicals, while the College's library has also joined the library network of Lithuanian higher education institutions.

All the teachers working under the BES study programme have prepared teaching/learning material related to their taught subjects. The teachers provide their course material both as hard and soft copies. The modules of the BES study programme are also prepared and uploaded in the MOODLE environment.

2.5. Study process and students' performance assessment

Admission requirements have been developed according to the general provisions of the Association of Lithuanian Higher Education Institution for General Admission and can be found on the webpage of the College. Secondary school education degree is required for applicants to enter the BES study programme. The highest mark of the contest entrance for full time studies in 2015 was 4.82 and the lowest 1.84 in a system of 10 points. Most of the entrants had not taken exams in physics or other physical sciences before entering the contest, thereby making the average entrance mark rather low (mark – 3.33). Teachers admit that first year students are often not suitably competent in physical sciences. The College collaborates with a local school, where it invites pupils to laboratories in the College and communicates with them so as to interest them in continuing their studies at the BES programme. This is a good practice and it is recommended that the College would apply this technique more intensively in the near future.

The study time-table has been developed according to the study plan with a maximum number of academic hours per day (8). Clearly, the study process is related to practical activities, while theoretical activities take up to 344 hours out of the total 4,800 programme hours. The consultations (216 hours in total) are reserved to help the students prepare for progress assessments. At the end of the semester there is a two to three-week examination session with two to six exams during one exam session. There are no less than two days for preparation for the exam, which is deemed ideal. Part-time students have considerably less contact hours and more individual working hours. Teachers prefer to integrate the theoretical part in practical work time, thus achieving a teaching methodology that maximizes the learning process and knowledge transferability to students. The specialization in the programme takes place during the 5th semester. 70% of the students choose to study heating, while only 30% chooses the water supply specialization. Individual tasks and the students' final thesis are checked for plagiarism by a common system in Lithuania called "eLABa".

Students have been noted to take part in applied research, quality assurance of the studies and participation in the student parliament. Students of the BES programme developed reports and were active participants in both national and international conferences. Usually, the College covers travel expenses, if a conference is in another city.

Students that have achieved high academic results are provided the possibility to study in institutions abroad or receive practical training in companies outside the country, whilst students of the Erasmus programme receive a scholarship in order to cover their expenses during the exchange period. The College promotes these mobility programmes and provides all the required information to students. Despite these efforts, the RP found that the students do not participate very actively in these programmes. This is attributed to the fact that the number of full-time students is very low and the College should take actions so as to change this phenomenon.

Organised adaptation events take place for the entrants of the BES programme, during which the students receive all required information. The College students are regularly consulted on academic issues. Teaching material is provided to students via the study environment MOODLE. It has been found that around 80% of methodological information is provided through the MOODLE platform. This is very convenient for both students and teachers.

The students that are found to struggle with their studies are provided with private consultations, the timetable of which can be found on the College webpage or the MOODLE platform. Disabled students are eligible to financial support and the infrastructure of the College has mostly been adapted to accommodate disabled students. Students who have attained academic failures are given the opportunity to correct them, which is performed according to a system that has been developed by the College. All students who wish to live in a dormitory are provided with the opportunity to do so. Students are given the ability to voice their opinion regarding lectures and teachers via surveys, however a sufficient analysis of the obtained results still needs to be developed.

The College’s assessment system uses an accumulative grade system. The final assessment consists of the sum of the grades of intermediate tests and an examination. At the beginning of the semester teachers inform students about the system of assessment of each subject through course syllabi. Feedback is a vital element in the student-teacher communication process; students and teachers seem to have a good relationship.

The survey carried out by the Career Management Information System (CMIS) in January 2016 says that it takes two to five months on average for College graduates to find a job. The average employment of BES programme students is 76.50%, which is found to be high. Part-time graduates have positions in labour markets already during their study time, while full-time students mainly allocate a job during their final year. A strong collaboration between the College and its social partners has been noted, as the social partners provide practises and equipment for student-learning activities. The social partners recommend promoting this programme among potential students, as the graduates of this programme are highly demanded in the industry. There is no connection between the College and graduates after their studies, therefore, it is recommended to improve this relation by activating the Alumni club.

2.6. Programme management

One of the main recommendations that derived from the previous RP's visit to the campus, was the management of the BES programme and the need of a highly active and competent academic leader that will promote the programme towards a sustainable growth. The management of the programme and its proper implementation is currently performed by the Study Programme Committee (SPC) and consists of 7 members including the chair of the committee (which is the dean of the faculty) and the coordinator. According to the Regulations of Study Programme Committees of the AC, the SPC is responsible to collect and analyse the data in regards to the weaknesses and inconsistencies of the programme and act upon comments of external reviewers and other specialists. After the visit to the Campus, the RP interviewed the newly appointed part-time coordinator of the programme and was found that he was competent and well aware of the programme's whereabouts. The RP found the appointment of a part-timer to be a temporary solution, therefore, a full-time coordinator appointment should be the next step. The weakness is now considered as a concern, thus still remains.

As reported in the BES programme's SER, the AC Internal Study Quality Management System is implemented where the implementation and data collection is performed. Based on the AC QA system, the SPC is responsible to certify every year the requirements for preparing graduation theses and assessment criteria, analyses the information received from stakeholders on the improvement of the study programme. The RP found the frequency of collecting the data to be adequate.

In addition to the above, every three years the BES study programme undertakes a self-assessment evaluation that is handled by the SPC committee, while the procedure foresees the

involvement of all stakeholders for the improvement of the programme. The recommendations received from the internal and external committees are accounted for, while the BES programme is reformed accordingly. The Coordinator also performs an analysis in regards to the program, as stated in the SER, and presents their findings to the Faculty Council for further improvements.

All stakeholders are involved in the improvement process, according to the QA standards implemented at the AC. The BES programme has a strong collaboration with the local enterprises that also utilizes this advantage towards improving their study programme. As verified during the visit, social partners participate in relative committees that are used to assess, analyse and improve the programme.

The faculty and the alumni are also involved in the evaluation procedure of the programme. The ALUMNI club is set in assisting towards establishing and maintaining a strong relation with the industry and social stakeholders. Students are participating in this procedure through surveys and their opinion in regards to the programme is evaluate accordingly. The RP found that the graduates and alumni require to be further involved in the improvement procedures of the programme. Alumni and graduates stated that they were not aware of any surveys given so as to record their opinion in regards to the programme. This needs to be addressed by involving the Alumni club in performing surveys and send the results to the QA department for analysis and development of recommendations.

The RP would like to acknowledge the full support and the strong ties of the social partners to the College and the BES programme. The BES programme should strive to maintain this connection and also take into advantage this collaboration by continuing analysing their recommendations and involving them in every programme improvement step/procedure.

There is in place a QA system that utilizes the BES programme to act upon weaknesses and integrate any required changes according to the received feedback. The QA measures are sufficient and well developed. Further improvement is required in the method of assessing the course learning outcomes according to the students' performance. The development of detailed course portfolio for each course would assist towards achieving this objective.

III. RECOMMENDATIONS

1. The new programme aims description is well defined but this information was not available on the website given that the BES web-link was not working (4th Nov. 2016). This was also confirmed during the visit. It is recommended to improve the English translation of the main aims of the programme so as to make them clear to future foreign students and to be added to the new webpage which will be in both Lithuanian and English languages.
2. The RP recommends the assignment of a code to each PLO so as to be able to use them in a compact manner within tables (especially within Syllabi and Instructor Reports).
3. Furthermore, the RP's analysis found that the element of the "life-long learning" was not included in a clear way within the new programme learning outcomes. This has to be integrated as well within the course activities that will satisfy this specific skill that should be included within a PLO.
4. The RP recommends that Table 3 of the SER should be updated by taking into account that the Final Practical Training course, is a course that should cover all of the study programme outcomes and the Final Project should also be included in the Table in order to achieve a spherical view of the programme learning outcomes balanced mapping. Practically, courses should not be correlated to more than 5 programme learning outcomes, except from Internships and Thesis/Final Projects.
5. It is recommended that the courses vs programme learning outcomes mapping should be performed through a matrix that should include all courses offered by the programme (including the Alternative/Elective courses offered by the BES programme). The balance of the mapping should also be checked.
6. Further enhancement of theoretical lectures volume on the account of decreasing individual working hours is recommended.
7. Adjustment of the programme to maximally utilize the state-of-the-art laboratories and modern equipment within its curriculum is recommended.
8. Students are provided with the possibility to participate in mobility programs; nevertheless, the number of students that actually participated is low. It is recommended that the College should take action in increasing its full-time students so as to tackle this problem.
9. The Staff/Student Ratio is 1:3. Recruitment of full-time students has been falling for a number of years. The College has to improve BES programme marketing in secondary schools and to attract students within and outside the Lithuanian borders by promoting its state-of-the-art laboratory.

10. The College has to establish transparent and understandable system of financial support of teachers' professional and pedagogical development.
11. The College should establish solid policies in regards to the funding of faculty in participating in national and international conferences every year and the financial support should be clearly stated as a pre-defined sufficient amount for each faculty member.
12. The College should develop a clear policy on how the funds of a project that is awarded to a faculty member, are distributed and inform all faculty members so as for them to be aware of this policy. The overheads should not be more than 20% of the overall project funding.
13. It is also recommended to make all policies available to faculty through the College web site.
14. After the visit to the Campus, the RP interviewed the newly appointed part-time coordinator of the programme and was found that he was competent and well aware of the programme's whereabouts. The RP found the appointment of a part-timer to be a temporary solution, therefore, recommends for a full-time coordinator appointment.
15. The RP found that the graduates and alumni require to be further involved in the improvement procedures of the programme, through e-surveys.
16. Further improvement is required in the method of assessing the course learning outcomes according to the students' performance. The development of detailed course portfolio for each course would assist towards achieving this objective.

IV. EXAMPLES OF EXCELLENCE *

The laboratories were found to be state-of-the-art for the standards in the region. The integration of renewable energy technologies in the newly developed laboratory represents an example of excellence for the Alytus College and the BES programme. The RP recommends that the College should use its maximum resources in order to promote and market this significant strength so as to attract more students within the Lithuanian borders and also other neighbouring countries.

IV. SUMMARY

The new programme aims description is well defined but this information was not available on the website given that the BES link was not working (4th Nov. 2016). This was also confirmed during the visit. It is recommended to improve the English translation of the main aims so as to make them clear to future foreign students. Furthermore, the RP's analysis on the programme learning outcomes (PLOs) found that the element of the "life-long learning" was not included in a clear way within the new PLOs. The BES PLOs and course matrix is provided in Table 3 (page 12 of the SER), where the mapping can be depicted. The RP recommends that this Table should be updated by taking into account that the Final Practical Training course, is a course that should cover all of the study programme outcomes and the Final Project should also be included in the Table in order to achieve a spherical view of the PLOs balanced mapping. Practically, courses should not be correlated to more than 5 programme learning outcomes, except from Internships and Thesis/Final Projects that should satisfy all PLOs.

The curriculum design meets the legal requirements and the content of the subjects and/or modules is consistent with the type and level of the studies. The subject modules are consistent with the College type studies of the Professional Bachelor Degree and are appropriate for the achievement of the intended learning outcomes. The subject module learning outcomes are generally consistent with the programme learning outcomes. Further enhancement of theoretical lectures on the account of decreasing individual working hours is recommended. The programme has to maximally utilize the state-of-the-art laboratories and modern equipment of the College in its curriculum.

The study programme is provided by staff meeting legal requirements and the qualification of the teaching staff is adequate to ensure learning outcomes. 2 P.hD. holders and 3 teachers were employed in the study programme during the assessment period, which helped to improve the quality of studies. The Staff/Student Ratio is 1:3, which is very low from the economical viewpoint but very good from the student's view (getting direct consultation within and outside the class). The teaching staff turnover was found to be low and able to ensure an adequate provision to the programme. The staff development activities are reviewed every 5 years. The College has to establish transparent and understandable system of financial support of teachers' professional and pedagogical development.

All premises of College are suitable for hosting the BES studies according to the labour safety and hygiene requirements. All study rooms were found to be equipped with computers and

multimedia projectors. The Regional Technology Centre (RTC) of the College serves optimally the BES study programme and its needs in laboratory activities. The RP evaluated the modern equipment of RTC as an example of excellence. The newly established Centre integrates among other a passive house, a geothermal heating system, solar panels, photovoltaic cells and a wind power plant, which is the first in the city of Alytus. The AC cooperates successfully with companies in organizing professional practical training. The College has signed cooperation agreements with 29 building services companies based in Alytus and other cities and regions. The library was also found to be properly equipped with updated books, textbooks, reference books related to the programme.

Admission requirements are clear and publicly available. Great emphasis is given towards the organization of the study process in order to attain practical skills in the state-of-the-art laboratories. Students are provided with the possibility to participate in mobility programs. Nevertheless, the number of students that actually participated was found to be low. The College assessment system is clear and adequate. The strong bond between the College and its social partners ensures the programmes suitability for the needs of the industry.

After the visit to the Campus, the RP interviewed the newly appointed part-time coordinator of the programme and was found that he was competent and well aware of the programme's whereabouts. The RP found the appointment of a part-timer to be a temporary solution, therefore, a full-time coordinator appointment should be the next step. The weakness is now considered as a concern, thus still remains. All stakeholders are involved in the improvement process, according to the QA standards implemented at the AC. The BES programme has a strong collaboration with the local enterprises that also utilizes this advantage towards improving their study programme. The RP found that the graduates and alumni require to be further involved in the improvement procedures of the programme. Alumni and graduates stated that they were not aware of any surveys given so as to record their opinion in regards to the programme. Further improvement is required in the method of assessing the course learning outcomes according to the students' performance. The development of detailed course portfolio for each course would assist towards achieving this objective.

V. GENERAL ASSESSMENT

The study programme Building Engineering Systems (state code – 653H24002) at Alytus College is given a positive evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Teaching staff	3
4.	Facilities and learning resources	4
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	**19**

*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:	Assoc. Prof. George Markou
Grupės nariai: Team members:	Assoc. Prof. Andrus Aavik
	Assoc. Prof. Liga Gaile
	Assoc. Prof. Vincentas Vytis Stragys
	Tautvydas Šimanauskas

ALYTAUS KOLEGIJOS PIRMOSIOS PAKOPOS STUDIJŲ PROGRAMOS *STATINIŲ INŽINERINĖS SISTEMOS* (VALSTYBINIS KODAS – 653H24002) 2017 KOVO 13 D. EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-44 IŠRAŠAS

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V. APIBENDRINAMASIS ĮVERTINIMAS

Alytaus kolegijos studijų programa *Statinių inžinerinės sistemos* (valstybinis kodas – 653H24002) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
1.	Programos tikslai ir numatomi studijų rezultatai	3
2.	Programos sandara	3
3.	Personalas	3
4.	Materialieji ištekliai	4
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	**19**

* 1 - Nepatenkinamai (yra esminių trūkumų, kuriuos būtina pašalinti)
2 - Patenkinamai (tenkina minimalius reikalavimus, reikia tobulinti)
3 - Gerai (sistemiškai plėtojama sritis, turi savitų bruožų)
4 - Labai gerai (sritis yra išskirtinė)

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IV. SANTRAUKA

Naujai apibrėžti studijų programos tikslai gerai suformuluoti, tačiau jų nebuvo internetinėje svetainėje, nes nuoroda į studijų programą *Statinių inžinerinės sistemos* neveikė (2016 m. lapkričio 4 d.). Ji taip pat neveikė ir per ekspertų grupės vizitą. Rekomenduojama peržiūrėti pagrindinių studijų programos tikslų vertimą į anglų kalbą, kad jie būtų aiškūs užsienio studentams, norintiems studijuoti šią studijų programą. Be to, ekspertų grupė, išanalizavusi studijų programos rezultatus, pastebėjo, kad mokymosi visą gyvenimą aspektas nebuvo aiškiai suformuluotas naujai apibrėžtuose studijų programos rezultatuose. Studijų programos *Statinių inžinerinės sistemos* rezultatų ir dalykų sąsajos pateiktos Savianalizės suvestinės 3 lentelėje (Savianalizės suvestinės 12 lape). Ekspertų grupė rekomenduoja atnaujinti šią lentelę, atsižvelgiant į tai, kad baigiamasis praktinio mokymo kursas turi apimti visus studijų programos rezultatus; baigiamasis darbas taip pat turi būti įtrauktas į lentelę, kad būtų matomos studijų

rezultatų sąsajos. Dalykams neturi būti priskirti daugiau nei 5 studijų programų rezultatai, išskyrus baigiamosios praktikos ir baigiamojo darbo dalykus, kurie turi apimti visus studijų programos rezultatus.

Programos sandara atitinka teisinius reikalavimus; dalykų ir (ar) modulių turinys atitinka studijų rūšį ir lygmenį. Dalykų moduliai atitinka profesinio bakalauro laipsnio koleginių studijų rūšį ir yra tinkami numatytiems studijų rezultatams pasiekti. Dalykų modulių rezultatai iš esmės dera su studijų programos rezultatais. Rekomenduojama didinti teorinių dalykų skaičių mažinant individualaus darbo valandas. Dėstant programą reikia kiek galima labiau išnaudoti šiuolaikines Kolegijos laboratorijas ir įrangą.

Dėstytojų kolektyvas atitinka teisinius reikalavimus; dėstytojų kvalifikacija tinkama studijų rezultatams pasiekti. Vertinimo laikotarpiu buvo priimti du daktaro laipsnį turintys dėstytojai ir trys dėstytojai – studijų kokybė buvo užtikrinta. Dėstytojų ir studentų santykis – 1:3. Tai nėra labai ekonomiška, tačiau labai naudinga studentams (jiems teikiamos tiesioginės konsultacijos per paskaitas ir ne paskaitų metu). Maža dėstytojų kaita užtikrina tinkamą studijų programos vykdymą. Dėstytojų profesinio tobulėjimo rezultatai vertinami kas 5 metai. Kolegija turi parengti skaidrią ir aiškią finansinės paramos sistemą dėstytojų profesiniam ir pedagoginiam ugdymui remti.

Visos Kolegijos patalpos tinkamos studijų programos *Statinių inžinerinės sistemos* vykdymui pagal darbo saugos ir higienos reikalavimus. Visos auditorijos aprūpintos kompiuteriais ir multimedijos projektoriais. Kolegijos regioninis technologijų centras vaidina svarbų vaidmenį vykdant studijų programą *Statinių inžinerinės sistemos* – studentai naudojasi centro laboratorijomis. Ekspertų grupės nuomone, centro įranga yra gerosios praktikos pavyzdys. Naujai įsteigtame centre taip pat yra namo maketas, geoterminė šildymo sistema, saulės baterijų plokštės, fotovoltiniai elementai ir pirmoji Alytaus mieste vėjo jėgainė. Organizuodama profesinį mokymą, Alytaus kolegija sėkmingai bendradarbiauja su įmonėmis. Kolegija pasirašė bendradarbiavimo sutartis su 29 Alytaus ir kitų miestų bei rajonų statybos įmonėmis. Biblioteka taip pat tinkamai aprūpinta – ji papildoma naujomis knygomis, vadovėliais, specializuota literatūra, kurios prireikia studijuojant šią studijų programą.

Studentų priėmimo reikalavimai yra aiškūs ir viešai skelbiami. Daug dėmesio skiriama studijų proceso organizavimui – studentai mokomi šiuolaikinėse laboratorijose, kad įgytų praktinių gebėjimų. Studentams suteikiama galimybė dalyvauti mobilumo programose. Tačiau šiose programose dalyvauja nedaug studentų. Kolegijoje naudojama pasiekimų vertinimo sistema aiški

ir tinkama. Glaudus bendradarbiavimas tarp Kolegijos ir socialinių partnerių užtikrina, kad studijų programa atitiktų pramonės poreikius.

Apsilankiusi Kolegijoje ekspertų grupė susitiko su naujai paskirtu ne visą darbo dieną dirbančiu studijų programos koordinatoriumi, kurį ekspertų grupė įvertino kaip kompetentingą ir gerai išmanantį studijų programos paskirtį ir perspektyvas. Ekspertų grupė mano, kad ne visą darbo dieną dirbančio koordinatoriaus paskyrimas yra laikinas sprendimas ir kad ateityje bus paskirtas visą dieną dirbantis koordinatorius. Šiuo metu šis trūkumas vis dar kelia susirūpinimą. Tobulinant studijų programą dalyvauja visi socialiniai partneriai, kaip numatyta Alytaus kolegijoje įdiegtuose kokybės užtikrinimo standartuose. Vykdant studijų programą *Statinių inžinerinės sistemos* glaudžiai bendradarbiaujama su vietos įmonėmis – tai padeda tobulinti studijų programą. Ekspertų grupės nuomone, absolventai ir alumnai turėtų ir toliau dalyvauti tobulinant studijų programą. Absolventai ir alumnai teigė, kad jie nebuvo informuoti apie rengiamas apklausas, kuriose galėtų pareikšti savo nuomonę apie studijų programą. Reikia dar labiau tobulinti kiekvieno studijų dalyko pasiekimus, naudojant metodus, nukreiptus į studentų rezultatų patikrinimą. Norint pasiekti šį tikslą, galima parengti išsamius kiekvieno dalyko aplankus.

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IV. GEROSIOS PRAKTIKOS PAVYZDŽIAI

Laboratorijos yra šiuolaikiškos pagal regiono standartus. Naujai įrengta laboratorija aprūpinta atsinaujinančių energetikos išteklių technologijomis – tai yra Alytaus kolegijos ir studijų programos Statinių inžinerinės sistemos gerosios praktikos pavyzdys. Ekspertų grupė rekomenduoja, kad Kolegija kuo labiau populiarintų ir reklamuotų savo išteklius, kad pritrauktų daugiau studentų iš Lietuvos ir kitų šalių.

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III. REKOMENDACIJOS

1. Naujai apibrėžti studijų programos tikslai gerai suformuluoti, tačiau jų nebuvo internetinėje svetainėje, nes nuoroda į studijų programą Statinių inžinerinės sistemos neveikė (2016 m. lapkričio 4 d.). Šis faktas buvo patvirtintas ir vizito metu. Rekomenduojama peržiūrėti pagrindinių studijų programos tikslų vertimą į anglų kalbą, kad jie būtų aiškūs užsienio

studentams, norintiems studijuoti šioje studijų programoje Studijų programos tikslai turi būti skelbiami naujoje internetinėje svetainėje lietuvių ir anglų kalbomis.

2. Ekspertų grupė rekomenduoja visiems studijų rezultatams priskirti kodus ir juos naudoti lentelėse, kad informacija būtų pateikta kompaktiškiau (ypač dalykų programų aprašuose ir dėstytojų ataskaitose).

3. Ekspertų grupė, išanalizavusi studijų programos rezultatus, pastebėjo, kad mokymosi visą gyvenimą aspektas nebuvo aiškiai suformuluotas naujai apibrėžtuose studijų programos rezultatuose. Būtina integruoti šį aspektą ir į dalykų aprašus bei užtikrinti, kad šis specialus gebėjimas būtų įtrauktas į studijų programos rezultatus.

4. Ekspertų grupė rekomenduoja atnaujinti Savianalizės suvestinės 3 lentelę, atsižvelgiant į tai, kad baigiamasis praktinio mokymo kursas turi apimti visus studijų programos rezultatus; baigiamasis darbas taip pat turi būti įtrauktas į lentelę, kad būtų matomos studijų rezultatų sąsajos. Iš esmės, dalykams neturi būti priskirti daugiau nei 5 studijų programų rezultatai, išskyrus baigiamosios praktikos ir baigiamojo darbo dalykus, kurie turi apimti visus studijų programos rezultatus.

5. Rekomenduojama sudaryti dalykų ir studijų programos rezultatų matricą ir nustatyti sąsajas, įtraukiant į matricą visus studijų programos dalykus (įskaitant studijų programos Statinių inžinerinės sistemos alternatyvius / pasirenkamus dalykus). Peržiūrėti sąsajas tarp dalykų ir studijų programos rezultatų.

6. Rekomenduojama didinti teorinių dalykų skaičių mažinant individualaus darbo valandas.

7. Dėstant programą reikia kiek galima labiau išnaudoti šiuolaikines Kolegijos laboratorijas ir įrangą.

8. Studentams suteikiama galimybė dalyvauti mobilumo programose. Tačiau šiose programose dalyvauja nedaug studentų. Siekiant išspręsti šią problemą, rekomenduojama, kad Kolegija imtųsi priemonių padidinti nuolatinių studijų studentų skaičių.

9. Dėstytojų ir studentų santykis – 1:3. Nuolatinių studijų studentų skaičius mažėjo kelerius metus iš eilės. Kolegija turi labiau populiarinti studijų programą Statinių inžinerinės sistemos vidurinėse mokyklose ir reklamuoti savo šiuolaikines laboratorijas, kad pritrauktų studentų iš Lietuvos ir kitų šalių.

10. Kolegija turi įdiegti skaidrią ir aiškią finansinės paramos sistemą dėstytojų profesiniam ir pedagoginiam ugdymui remti.

11. Kolegija turi parengti fakulteto dalyvavimo nacionalinėse ir tarptautinėse konferencijose kiekvienais metais finansavimo strategiją, numatant tikslią ir pakankamą finansinės paramos sumą kiekvienam fakulteto darbuotojui.

12. Kolegija turi parengti aiškią strategiją, pagal kurią fakulteto nariams būtų skirstomos lėšos projektams vykdyti, ir supažindinti su šia strategija visus fakulteto darbuotojus. Pridėtinės projekto vykdymo išlaidos neturėtų sudaryti daugiau nei 20 % visos projekto finansavimo sumos.

13. Rekomenduojama, kad visos vidinės tvarkos būtų skelbiamos Kolegijos internetinėje svetainėje.

14. Apsilankiusi Kolegijoje ekspertų grupė susitiko su naujai paskirtu ne visą darbo dieną dirbančiu studijų programos koordinatoriumi, kurį ekspertų grupė įvertino kaip kompetentingą ir gerai išmanantį studijų programos paskirtį ir perspektyvas. Ekspertų grupė mano, kad ne visą darbo dieną dirbančio koordinatoriaus paskyrimas yra laikinas sprendimas ir kad ateityje bus paskirtas visą dieną dirbantis koordinatorius.

15. Ekspertų grupė mano, kad absolventai ir alumnai turi būti įtraukti į studijų programos tobulinimo procesą. Reikia rengti absolventų ir alumnų elektronines apklausas.

16. Reikia dar labiau tobulinti kiekvieno studijų dalyko pasiekimus, naudojant metodus, nukreiptus į studentų rezultatų patikrinimą. Norint pasiekti šį tikslą, galima parengti išsamius kiekvieno dalyko aplankus.

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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.

Vertėjos rekvizitai (vardas, pavardė, parašas)