STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

ŠIAULIŲ UNIVERSITETO
STUDIJŲ PROGRAMOS
MECHANIKOS INŽINERIJA (valstybinis kodas – 612H30005)
VERTINIMO IŠVADOS

EVALUATION REPORT
OF *MECHANICAL ENGINEERING (state code – 612H30005)*
STUDY PROGRAMME
At SIAULIAI UNIVERSITY

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Išvados parengtos anglų kalba
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DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	***Mechanikos inžinerija***
Valstybinis kodas	612H30005
Studijų sritis	Technologijos mokslai
Studijų kryptis	Mechanikos inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirmoji
Studijų forma (trukmė metais)	nuolatinės (4), ištęstinės (5,5)
Studijų programos apimtis kreditais	240
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Mechanikos inžinerijos bakalauras
Studijų programos įregistravimo data	2010-05-03 įsakymas Nr. V-635

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	***Mechanical Engineering***
State code	612H30005
Study area	Technology Sciences
Study field	Mechanical Engineering
Type of the study programme	University studies
Study cycle	First cycle
Study mode (length in years)	Full-time (4), part-time (5,5)
Volume of the study programme in credits	240
Degree and (or) professional qualifications awarded	Bachelor in Mechanical Engineerring
Date of registration of the study programme	2010-05-03 Order No. V-635

CONTENTS

I. INTRODUCTION

1.1. Background of the evaluation process

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

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

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

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

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

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

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

1.2. General

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

No.	Name of the document
1.	List of subjects taught for Erasmus students at Siauliai University (2015-2016 academic year; 201-2015 academic year)
2.	Schedules of Siauliai University “Quality Days” events
3.	Protocols of Study Programme Committee meetings of Siauliai University Mechanic Department (including social partners)
4.	Siauliai University Action Plan of Mecanical Engineering Department (2013-2015 academic year)

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

Bachelor’s degree higher education university study programme of *Mechanical Engineering* (hereinafter – ME) in the study field of Mechanical Engineering is implemented by Siauliai University in the Faculty of Technology that was in November 2013 restructured and merged with the Faculty of Natural Sciences into a new Faculty of Technology and Natural Sciences under which the programme is held in present time. The ME study programme is supervised by the Department of Mechanical Engineering (hereinafter – the “Department”).

The ME study programme was evaluated by the external Expert team in 2008. The programme received a mainly positive evaluation and was accredited for six years. According to the Self-evaluation report, throughout the period under analysis (2008–2014), the programme was being constantly perfected, based on conclusions and recommendations received from external experts; also based on Bologna process and new national documents on higher education and suggestions of social stakeholders.

This evaluation report is based on the Self-evaluation report submitted by Siauliai University and a visit to the university by the Expert team on 28th January 2015, during which relevant facilities were inspected, the students’ final works/course papers were briefly reviewed, and discussions were held with the following groups:

- University administration
- Self-assessment group
- Teaching staff
- Students
- Alumni
- Social partners

1.4. The Review Team

The review team was assembled in accordance with the *Expert Selection Procedure*, approved by Order No 1-55 of 19 March 2007 of the Director of the Centre for Quality Assessment in Higher Education, as amended on 11 November 2011. The Review Visit to HEI was conducted by the team on 28th January, 2015.

1. Dr. Oluremi Ayotunde Olatunbosun (team leader), Senior Lecturer and Head of the Vehicle Dynamics Laboratory, School of Mechanical Engineering, University of Birmingham, United Kingdom.
2. Dr. Rynno Lohmus, Head of the commision of Estonian Higher Education Quality Agency; Senior Researcher at Faculty of Science and Technology, Institute of Physics, University of Tartu, Estonia.
3. Dr. Bojan Dolšak, Associate Professor and Head of Department for Construction and Design at Faculty of Mechanical Engineering, University of Maribor, Slovenia.
4. Dr. Andrius Vilkauskas, Dean of the Faculty of Mechanical Engineering and Design, Kaunas University of Technology, Lithuania.
5. Dr. Vigantas Kumšlytis, Manager of materials engineering and technical analysis at Public Company “Orlen Lietuva”, Lithuania.
6. Mr. Justinas Staugaitis, student representative from Kaunas University of Technology, Lithuania.

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The stated purpose and aim of the study programme of *Mechanical Engineering* at Siauliai University as declared in the SER is to educate high-quality Bachelors of Mechanical Engineering who would successfully work in companies of Siauliai region, Lithuania or foreign countries; to educate staff of mechanical engineering who are able to design technical products, to select production technologies and means, to control technological processes, to assess engineering solutions from ethical, social, economic and safety points of view. The programme aims and learning outcomes are well defined and clear. Correlations of anticipated learning outcomes and subjects constituting the programme are presented in the Self-evaluation report. During the site visit it was clarified that the programme is oriented mainly into Siauliai region and perhaps Lithuania labour market rather than foreign countries as written in the purpose description.

The programme aims and learning outcomes are consistent with the requirements for a Bachelor degree and are based on the academic requirements and meet the requirements for first-cycle study programme set in Description of State Qualifications of Lithuania[1], Law on Research and Studies of the Republic of Lithuania[2], documents of the Bologna Process especially Dublin Descriptors[3]. Learning outcomes of the study programme are related to the EU concept of quality in higher education and meet the requirements and recommendations on development of EU higher education as well as legal documents of the Republic of Lithuania. The programme aims and learning outcomes are not enough publicly available. They are available in Siauliai University Academic internal Information System but publicly this information is not accessible as username and password are needed to access the information at the University Academic Information System. Most of the students which the Expert team met during the site visit do not know what the anticipated learning outcomes are.

Aiming to increase internationalisation, in 2013 the learning outcomes of the programme have been formulated according to the EUR-ACE12 standard. Siauliai University *Mechanical Engineering* study programme focused on the labor market area „whereby required specialists are able to design technical equipment, to select production technologies and means, to control technological processes, to assess engineering solutions from ethical, social, economic and safety points of view“ (SER page 7). In the Self-evaluation report some contradictions have been found: One of the strengths noted in the SER (page 9) is: „In Šiauliai city and region there is a demand for specialists educated by this Programme“ however some contradicting data is provided; „In 2014, the labour exchange office assessed possibilities of employment of mechanical engineering specialists in Lithuania, and also in Siauliai county as average“ SER page 6). As written in the Self-evaluation report (page 6), “Bachelors of Mechanical Engineering are of a broad profile, therefore they are wanted not only in mechanical departments of mechanical objects, but also light industry, food industry”, but this sentence is unsupported by any analysis.

The university arranges formal and informal meetings with social stakeholders each year to discuss issues on studies and anticipated learning outcomes. In this context the most important

[1] Description of state of qualification of Lithuania (Government of Republic of Lithuania 4 May, 2010 No. 5352010).
[2] Law of Republic of Lithuania No. XI-242 „Law On Higher Education And Research“ (2009. 04. 30).
[3] Dublin Descriptors, 2004. (http://www.jointquality.nl/content/descriptors/CompletesetDublinDescriptors.doc).

event is carried out every spring, when so called “Quality Days” are taking place at the university, where university staff, social partners and students meet together and discuss various quality issues in a form of a round table. During the visit the schedules of those events were presented to the Expert team. In such a way the programme aims and learning outcomes can be adjusted to the public needs of the Siauliai region labour market.

Earlier outcomes of the study programme were formulated on the ground of the General Regulations for Studies in the Area of Technology Sciences (Engineering), approved by the Minister of Education and Science of the Republic of Lithuania, later in 2013 the learning outcomes of the programme have been formulated according to the EUR-ACE standard.

The name of the programme is clear and very conservatively and closely linked to the study field. The aims and outcomes essentially correspond to the name. Bachelor of Mechanical Engineering degree and diploma attachment issued after completion the study programme. These bachelors can continue their studies by postgraduate programs in other Lithuanian and foreign universities.The learning outcomes meet the requirements set for university study programmes awarding Bachelor’s Qualification Degree: a student gains competences required for the first-cycle university Bachelor’s Qualification Degree, which corresponds to the level 6 of the European and Lithuanian National Qualifications Framework and the European Framework of Lifelong Learning Qualifications.

Strengths

- The objective and learning outcomes of the study programme are well defined in terms of the knowledge, awareness, abilities and skills which the graduate will be expected to possess on completion of the Bachelor’s programme.
- Learning outcomes of the study programme are based on academic and professional requirements as well as public and labour market needs.
- Annually organised “Quality Days” event represent an example of a good practice meeting with social partners.

Weaknesses

- The programme aims and learning outcomes are not enough publicly available.
- The programme is mostly oriented into local region and carried out in Lithuanian language, which does not ensure a consistent achievement of the stated aim of the programme to educate bachelors of mechanical engineering that will be able to work successfully also in foreign countries.

2.2. Curriculum design

The design of the *Mechanical Engineering* study programme meets requirements of the Description of General Requirements for Degree-Awarding First-Cycle and Integrated Study Programmes[4]. The curriculum meets the legal requirements for a Bachelor degree.

[4] Description of General Requirements for Degree-Awarding First Cycle and Integrated Study Programmes, approved by Order No V-501 of the Minister of Education and Science of the Republic of Lithuania of 09/04/2010.

The volume of the programme in part-time studies is the same as in full-time studies (240 ECTS). The volume of the programme, 240 ECTS (4-years full-time, 5,5 years part-time), appears adequate to allow the achievement of the learning outcomes.

The study subjects are reasonably and evenly spread and their themes are not repetitive. There is a concerted effort to ensure that the students are led from general courses to basic professional ones and thence to more complex professional courses. Study subjects are distributed according to a logical sequence aiming to retain stable study intensity in all semesters. Intensity of part-time studies is lower than that of full-time studies. The part-time study form is chosen by those entrants who are working or planning to work, or due to other reasons want to study at lower intensity.

The content of the subjects is consistent with type and level of studies and conform to the law on Higher Education and Research of the Republic of Lithuania, Description of General Requirements for Degree-Awarding First-Cycle and Consecutive Study Programmes, Description of Full-time and Part-time Study Forms, general and specific requirements of the General Regulations of the Technology Sciences (Engineering) Study Area and ECTS User Guide.

The correlation of study subjects and modules with learning outcome was fairly informative and clearly demonstrated in Self-evaluation report.

All study subjects are accredited for not longer than 5 years period, according to the University Regulations of Accreditation of Study Subjects. Teaching staff periodically update the content of their subjects, regarding innovations in science and technologies, detail topics of subjects, methods of assessment of studying and achievements, character and volume of tasks for independent work.

The content of the programme not wholly reflects the latest achievements in science and technologies, because the references and additional literature for modules related to mostly changing industry is not new enough (For example: “Measurements” the newest literature is dated of the year 2000; “Operation Systems of Technological Devices” the main literature is dated of the year 1981.).

There is a low level of teachers’ international mobility. Only 6 teachers of study programme participated in short term (about 1 week) international mobility programs during evaluated period. Students and alumni would like to include into curriculum more lectures and laboratory or practice works related to 3D designing and modelling. Their opinion is based on latter-day industry requirements. The curriculum does not contain any subject specific or other lectures in foreign language although students would like this.

Strengths

- The design of the curriculum meets all legal requirements.
- Study subjects are spread evenly over the programme and a logical sequence in their delivery consistent with learning outcomes is apparent.
- The learning outcomes of the study programme correspond to the type and cycle of study.

Weaknesses

- The periods of international mobility of most Lecturers is too limited to enable them to engage with the research and technology of host institutions. This is reflected in outdated references provided for some modules related to fast changing areas of the industry.
- Content of some subjects doesn't reflect the expectations of students and social partners.
- Looking into the future of designing, 3D modelling should be strengthened and attention should be paid to students' and social partner's suggestions.

2.3. Teaching staff

In academic year 2013/2014, 25 teachers work in the programme, among them 2 professors, 13 associate professors (mismatches between provided documentation has been found: 22 teachers in the annex 3, 25 teachers in Self-evaluation report p.63 -, 27 teachers in annex 2).

Staff members have benefitted from international experience; the Faculty participates in LLP/Erasmus programme and collaborates with universities and other higher education institutions in Turkey, Denmark, Czech Republic and Hungary. Some staff members of the programme quite intensively used opportunities for professional development, internships, international scientific conferences and courses. However only 6 members of staff were involved in international relationships, in the international conferences or Erasmus programme. Possibly the cause is insufficient foreign language skills of most lecturers. Collaboration with foreign universities should be encouraged.

Qualification of the staff working in the study programme meet the legal requirements, "General Regulations of Technology Sciences (Engineering) Study Area. The qualification and professional skills of the teaching staff are adequate to provide listed subjects and modules, also to ensure learning outcomes. Considering the list of scientific publications of the teaching staff, the level of scientific research needs to be improved in order to obtain results that will enable writing scientific papers publishable into international scientific journals.

The average ratio of teachers and students in full-time studies is 1:6, in part-time studies is 1:9 (SER p. 20). This ratio ensures high quality of studies because of a small flow of students increased possibilities for direct contact with teachers, better mutual understanding between teacher and student. However there is a need to think about strategies that could help to increase the number of students.

The average age of Department's teachers delivering Bachelor's study programme is 55 years (over 60 years – 8 teachers, three of them over 70), almost everyone has got practical work experience. During the period under evaluation one staff member has recently defended their PhD degree and three members were awarded pedagogical titles of Associate Professors. But attention needs to be paid to attracting younger teachers for the next accreditation period to ensure an adequate provision of the programme.

The Department of Mechanical Engineering takes part in projects and has signed long-term agreements with many industrial companies. In 2002, the Centre of Technological Experiments has been established under the Department. Teaching staff and the students are involved into activities of this centre. On the ground of works carried out at the centre, several Bachelors' theses have been prepared.

Strengths

- Teaching staff of the programme meet the qualification requirements.
- The staff have the possibilities and funds to develop their professional competence through professional development courses, internships in industry, international conferences and seminars.
- Almost every teacher has got good practical experience.

Weaknesses

- The foreign language skills of most lecturers should be improved for them to participate in international mobility programmes or to deliver lectures in foreign language.
- Most study visits are very short and insufficient for teachers to engage in the research of the host institution and absorb the latest technological developments in their field.

2.4. Facilities and learning resources

Premises of Siauliai University Faculty of Technology and Natural Sciences (Vilniaus St. 141) are used. The area used for studies and scientific research (rooms, laboratories, etc.) covers approximately 5000 m^2. Covered area and work places there do not cause any problems because the amount of students participating in the study process is small.

The equipment listed in Self-evaluation report (table 2.13) is sufficient to perform program tasks; however some laboratories of this field should be upgraded. For example, in the laboratory of metal cutting machines most of the metal cutting equipment, including CNC machines, are quite old and should be replaced in the near future. The same applies for the materials testing machines, most of which are quite old and need replacement. However the Expert team was quite impressed with the Mechatronics laboratory which has been updated with modern equipment.

Very well equipped is the Centre of Technological Experiments established under the Department. It is an internationally accredited test laboratory for homologation of bicycles supported by regional bicycle company “Baltic Vairas” and represent how research work at the university level may and should exceed the limits of the local environment. It is important to take into account the suggestions and wishes of teachers, lecturers like to have 3D printer for more attractive teaching.

Student practice is a very important part of the *Mechanical Engineering* studies programmes (both at Bachelor and Master levels). The subject “Training Practical Placement” is carried out in the Laboratory of Machinery Production Technology. The subject “Practical Placement on Professional Performance” is carried out in industrial companies. This is performed in tight collaboration between companies and Siauliai University.

Staff and students of *Mechanical Engineering* study programme have access to Siauliai University central library and Faculty library. During the visit to the library the Expert team was satisfied that the library is new and very well equipped. Moreover, a lot of computers that are not in use there (apparently because most of the students are using their own laptops) are much better quality than most of those seen in the laboratories at the department. All funds of the University library are accessible and ordered via internet Aleph Library portal. According to the students, most of the teaching materials are accessible online, only a few teachers are using Moodle, while others publish their teaching materials on web pages. The students and teaching staff have a possibility to use 29 subscribed scientific information data bases (eBooks on

ScienceDirect, Reference Library, Springer LINK etc.). As written in self-analysis not all data bases are suitable, there is lack of IEEE Xplore data base, dedicated to technology sciences.

Strengths

- Some laboratories are renovated and well equipped (for example, the Mechatronics laboratory and Centre of Technological Experiments as certified testing laboratory).
- The university central library is new and very well equipped.

Weaknesses

- Some laboratories lack equipment (laboratory for exploration of characteristics of engineering materials, Laboratory of metal cutting machines) and should be upgraded.
- Only few teachers use Moodle in e-learning mode.

2.5. Study process and students' performance assessment

The programme enrols individuals obtaining secondary (or equivalent) education. Admission proceeds according to legal acts of the Republic of Lithuania regulating admission to universities and organisation of studies in higher education institutions of Lithuania, also the Principles of Joint Admission.

The organisation of study process is rational. Lectures, seminars, practical classes, laboratory work are evenly distributed throughout the semester: theoretical classes are supported by practical classes. Students' work load per week is distributed rationally too.

Students should be more encouraged to participate in research and applied research activities. The students have opportunity to participate in mobility programmes outside Lithuania via Erasmus exchanges in several European countries. Unfortunately the number of students who participated is not too high. It is recommended that this issue receives further attention by management with a view to enhancing the internationalisation of the Mechanical Engineering programme.

International mobility of teaching staff and students is promoted by using the programme LLP/Erasmus for Lifelong learning intended for higher education. During the period under evaluation there were just a few students of the programme going to foreign universities. The students would prefer to have more lectures in English to improve their professional vocabulary. They also think that social partners should present their experience at the lectures. On the other hand, social partners are willing to do that if the department would invite them.

The university ensures an adequate level of academic support, particularly to first-year students. Social support is adequate too. The university provides social support to students who combine studies and family life. They are provided with free of charge consultations of a psychologist, jurist; students with their family members may use services of Siauliai University medical service unit. What can really be defined as a good practice support for students is provision for young parents in the central library equipped with nursery room for kids. Besides financial support regulated by various legislation, the university applies a discount of solidarity (20-30%) for students whose financial conditions are especially complicated. Siauliai University runs four dormitories with 900 places. Students do not have problems to receive places for accommodation, all requests are satisfied, because most part of all students is from Siauliai who do not need a dormitory.

The assessment system is fairly clear following Siauliai University Regulations of Studies. Siauliai University applied the accumulative assessment aiming to ensure students' active work throughout the semester. Criteria for assessment of students' achievements are publicised at the beginning of a semester but they are not publicly available.

Most of the students do not know what the anticipated learning outcomes are.

Final theses are related to real industry problems of Siauliai region companies and suitably prepared.

Only 4% of alumni are working in the field that is not related with their studies. As told by the social partners during meeting, the Siauliai university graduates of Mechanical Engineering Bachelors are required in Siauliai region and Lithuanian labour market. Most of the graduates are working in industrial companies of the Siauliai region as design and production engineers, and those who attended the interview with the Expert team were very happy with the education they got from their studies.

Strengths

- The graduates and their employees are satisfied with the knowledge and competences gained within the study programme.
- There is a strong demand for the graduates in the region.
- Final theses are related to real industry problems of Siauliai region companies.
- Support for students who combine studies and family life and young parents.

Weaknesses

- Reduced number of entrants.
- The potential of social partners' support in study process are not exploited enough..

2.6. Programme management

System for Management of Quality of Studies has been implemented and responsibilities for decisions and monitoring of the implementation of the programme are clearly allocated through this system. The faculty Study Programme Assessment Committee is responsible for supervision and control of study programmes being delivered at the Faculty. Social partners are members of this committee. The Programme committee is responsible for implementation of the programme's aims and regular monitoring. Study programme is being periodically evaluated and modified, at least every three years. The analysis is discussed on "Quality Day" events at which discussions are held and decisions taken about changes to the programme.

On-line students' survey is collected at the Department at the end of each semester. Quality of subjects of the programme and quality of their delivery are assessed.

Every year teachers update descriptions (programmes) of study subjects based on surveys information analysis and minutes of meetings with social partners. Teachers add new literature entries, advanced teaching methods and other recent information.

Participation of social stakeholders in assessment and perfection of study programme quality is efficient because remarks and endeavours of pedagogical and research staff are not enough to

find and correct aspects of the programme to-be-improved. There are no questionnaires for the alumni and employees, although they are willing to respond.

During internal assessment the weaknesses of the programme are identified, efforts are made to renew the study subjects or modules and their content. The evaluation and improvement processes involve all stakeholders. However, the internal quality assurance measures should be improved. All stakeholders should be better informed and encouraged to take part in quality assurance process. The quality assurance process should also be better documented and should form a closed loop. After the action plan is made, based on the information gathered and processed for a certain time period, its implementation needs to be also systematically monitored.

Strengths

- Good process of involving social partners in programme committee.
- Programme is constantly being adjusted in consultation with social partners and students.
- An action plan is made upon the recommendations.

Weaknesses

- There are no questionnaires for the alumni and employees, although they are willing to respond. This is important, as not everybody can attend the „Quality Days“ events.

III. RECOMMENDATIONS

1. Some laboratories need to be updated – university would need to find funds to invest.
2. More courses should be taught in English especially to attract more foreign students and to provide opportunities local students who wish to study in English. Students are ready, the university and teachers need to take action to provide it.
3. Encourage students and staff mobility.
4. Invite social partners to present their experience at the lectures.
5. The quality assurance process should be better documented and should form a closed loop by continuous monitoring the implementation of the action plan.

IV. EXAMPLES OF EXCELLENCE (GOOD PRACTICE)

Every spring in March the university organises the “Quality Days” event, where university staff, social partners and students meet together and discuss various quality issues in a form of a round table. These meetings with social partners, where the university can ask them for help towards whatever problems they have, represent an example of a good practice. However, the whole potential is not used, as the social partners are enthusiastic to do more.

The Centre for technology experiments is an internationally accredited test laboratory for homologation of bicycles supported by regional bicycle company, and as such represents an example of good practice how research work at the university level may and should exceed the limits of the local environment.

Support for students, young parents in the library equipped nursery room for kids can really be defined as a good practice.

V. SUMMARY

The stated aim of the study programme of *Mechanical Engineering* at the Siauliai University is to train mechanical engineers who are capable of designing technical products, selecting production technologies and means, monitoring technological processes and assessing engineering solutions by ethical, social, economic and safety points of view.

Graduates are awarded the Bachelor’s degree in mechanical engineering after a study consisting of 240 ECTS credits. The previous study programme was evaluated by the external Expert team in 2008 which recommended that the *Mechanical Engineering* study programme should be given full accreditation.

The curriculum being evaluated fulfils all legal requirements. The objective and learning outcomes of the study programme are well defined in terms of the knowledge, abilities and skills which the graduate will be expected to possess on completion of the Bachelor’s programme. There is a big demand for mechanical engineers in Siauliai region, in this respect, the Bachelor’s study programme at Siauliai University is certainly needed and worth to develop further. Companies are satisfied with the knowledge and competences of the graduates.

There are two major problems that need to be addressed immediately. First, the new teachers that will be able to take over from the older colleagues when they will retire need to be attracted.

The university must invest more funds and effort in development of their own teaching staff and its internationalisation, from mobility to more active research and higher ranked scientific publications. Secondly, some of the laboratories and equipment need to be updated as soon as possible in order to ensure the programme will reflect the latest development in both scientific and technological field of studies.

Taking into account all the changes that were made in accordance with the remarks and recommendations of the previous evaluation, it can be concluded that the university has made a step forward. The organisation of the annual event called “Quality days”, and international accreditation of the Centre for technology experiments are worth to be specially highlighted as examples of good practice.

VI. GENERAL ASSESSMENT

The study programme *Mechanical Engineering* (state code – 612H30005) at Siauliai University is given **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points*
1.	Programme aims and learning outcomes	3
2.	Curriculum design	3
3.	Teaching staff	3
4.	Facilities and learning resources	3
5.	Study process and students' performance assessment	3
6.	Programme management	3
	Total:	**18**

*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:	Dr. Oluremi Ayotunde Olatunbosun
Grupės nariai: Team members:	Dr. Rynno Lohmus
	Dr. Bojan Dolšak
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	Mr. Justinas Staugaitis

Vertimas iš anglų kalbos

ŠIAULIŲ UNIVERSITETO ANTROSIOS PAKOPOS STUDIJŲ PROGRAMOS *MECHANIKOS INŽINERIJA* (VALSTYBINIS KODAS – 612H30005) 2015-03-16 EKSPERTINIO VERTINIMO IŠVADŲ NR. SV4-53-6 IŠRAŠAS

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VI. APIBENDRINAMASIS ĮVERTINIMAS

Šiaulių universiteto studijų programa *Mechanikos inžinerija* (valstybinis kodas – 612H30005) 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	3
5.	Studijų eiga ir jos vertinimas	3
6.	Programos vadyba	3
	Iš viso:	**18**

* 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)

<...>

V. SANTRAUKA

Šiaulių universitete vykdomos studijų programos *Mechanikos inžinerija* tikslas – parengti mechanikos inžinierius, gebančius projektuoti techninius gaminius, pasirinkti gamybos technologijas ir priemones, stebėti technologinius procesus ir įvertinti inžinerinius sprendimus etikos, socialiniu, ekonominiu ir saugumo požiūriu.

Baigusiems 240 ECTS kreditų studijas suteikiamas mechanikos inžinerijos bakalauro laipsnis. Ankstesnė studijų programa išorinės ekspertų grupės buvo įvertinta 2008 m., rekomenduojant studijų programą *Mechanikos inžinerija* akredituoti be sąlygų.

Vertinamas studijų turinys atitinka visus teisinius reikalavimus. Studijų programos tikslas ir studijų rezultatai yra gerai apibrėžti žinių, supratimo, gebėjimų ir įgūdžių, kuriuos absolventas turės baigęs magistrantūros programą, prasme. Šiaulių regione yra didelė mechanikos inžinierių paklausa, todėl ši bakalauro studijų programa Šiaulių universitete yra tikrai reikalinga ir verta ją toliau plėtoti. Įmonės yra patenkintos absolventų žiniomis ir kompetencija.

Egzistuoja dvi pagrindinės problemos, kurias būtina nedelsiant spręsti. Pirma, būtina pritraukti naujus dėstytojus, kurie pakeistų vyresnius kolegas, kai jie išeis į pensiją. Universitetas turi skirti daugiau lėšų ir pastangų kuriant savo dėstytojų komandą ir plėtojant jų tarptautiškumą, pradedant nuo judumo ir aktyvesnių mokslinių tyrimų bei labai gerai vertinamų mokslinių publikacijų

skelbimo. Antra, kaip įmanoma greičiau būtina atnaujinti kai kurias laboratorijas ir įrangą, siekiant užtikrinti, kad programa atspindėtų naujausius pasiekimus mokslo ir technologijų studijų srityje.

Įvertinus visus pakeitimus, kurie buvo atlikti atsižvelgus į ankstesnio vertinimo pastabas ir rekomendacijas, galima daryti išvadą, kad universitetas žengė žingsnį į priekį. Kaip gerosios praktikos pavyzdžius būtina akcentuoti metinio „Kokybės dienos“ renginio organizavimą ir tarptautinę Technologinių bandymų centro akreditaciją.

<…>

III. REKOMENDACIJOS

1. Būtina atnaujinti kai kurias laboratorijas; universitetas turėtų rasti lėšų šioms investicijoms.
2. Daugiau dalykų turėtų būti dėstoma anglų kalba, ypač siekiant pritraukti studentus iš užsienio ir suteikti galimybes vietiniams studentams, kurie nori studijuoti anglų kalba. Studentai yra pasirengę, todėl universitetas ir dėstytojai turi imtis veiksmų tai įgyvendinti.
3. Skatinti studentų ir dėstytojų judumą.
4. Kviesti socialinius partnerius paskaitose pristatyti savo patirtį.
5. Kokybės užtikrinimo procesas turėtų būti geriau įforminamas ir sudaryti baigtinį procesą, garantuojant nuotolinę įgyvendinamo veiksmų plano stebėseną.

<…>

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)