



STUDIJŲ KOKYBĖS VERTINIMO CENTRAS

Kauno technologijos universiteto (Panevėžio fakulteto)
**STUDIJŲ PROGRAMOS *TRANSPORTO PRIEMONIŲ*
*INŽINERIJA (612E20001)***
VERTINIMO IŠVADOS

**EVALUATION REPORT
OF *VEHICLE ENGINEERING (612E20001)*
STUDY PROGRAMME**

at Kaunas University of Technology (Panevėžys Faculty)

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Išvados parengtos anglų kalba
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Vilnius
2014

DUOMENYS APIE ĮVERTINTĄ PROGRAMĄ

Studijų programos pavadinimas	<i>Transporto priemonių inžinerija</i>
Valstybinis kodas	612E20001
Studijų sritis	Technologijos mokslai
Studijų kryptis	Sausumos transporto inžinerija
Studijų programos rūšis	Universitetinės studijos
Studijų pakopa	Pirma
Studijų forma (trukmė metais)	Nuolatinė (4), iššėstinė (6)
Studijų programos apimtis kreditais	240
Suteikiamas laipsnis ir (ar) profesinė kvalifikacija	Sausumos transporto inžinerijos bakalaurs
Studijų programos įregistravimo data	19.05.1997.Nr. 565.

INFORMATION ON EVALUATED STUDY PROGRAMME

Title of the study programme	Vehicle Engineering
State code	612E20001
Study area	Technology studies
Study field	Transport engineering
Type of the study programme	University studies
Study cycle	First
Study mode (length in years)	Full time (4), part time (6)
Volume of the study programme in credits	240
Degree and (or) professional qualifications awarded	Bachelor in Transport Engineering
Date of registration of the study programme	19.05.1997.Nr. 565.

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 The Centre for Quality Assessment in Higher Education

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I. INTRODUCTION

1.1. *Background of the evaluation process*

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

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

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

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

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

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

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

1.2. *General*

The Application documentation submitted by the HEI follows the outline recommended by the SKVC. 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	KTU (Panevėžys faculty) Strategic plan
2	FIRST STUDY CYCLE PROGRAMME Vehicle Engineering 2014-15
3	Cooperation agreement with Panevėžys industry association
4	Staff qualifications up scaling plan
5	Quality manual
6	Plan on data collection and analysis
7	Annual activity plan

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

The mission of Kaunas University of Technology (referred to as KTU) is to provide research-based international studies, the creation and transfer of knowledge and innovative technologies for the sustainable development of the State.

Since November 2013 the updated study programme of Vehicle Engineering at KTU had been conducted at the KTU Panevėžys Institute Faculty of Technologies (referred to as KTU-PI).

Since 2014 the KTU Panevėžys Institute has been reorganized to the KTU Panevėžys Faculty of Technologies and Business, which consists of two departments: Technology and Economics, and Business. The reorganization of KTU Panevėžys Institute is not finished yet, therefore the self-analysis is carried out according to the structure and activities which were found until January 1st, 2014.

The Panevėžys Institute (KTU-PI) BSc Vehicle Engineering programme is focused on “automotive repair and maintenance” which distinguishes it from the BSc Vehicle Engineering programme (with the same registration number 61203T112) which runs in the Faculty of Mechanical Engineering and Mechatronics (Department of Transport Engineering) in KTU at Kaunas. The programme have the same basic structure and core modules (module descriptors are identical) and there are only differences between the two programmes in specialised subjects for which 15 credits are allocated. (one specialisation is thought in Panevėžys, other in Kaunas). Due to a good correlation of the programme at KTU-PI with the programme at KTU graduates can progress directly to the MSc Vehicle Engineering programme at KTU.

In 2010 the international assessment of the study programme of Vehicle Engineering was carried out. This study programme was accredited until December 31st, 2014, for three years period.

1.4. The Review Team

The review team was completed according *Description of experts' recruitment*, approved by order No. 1-01-151 of Acting Director of the Centre for Quality Assessment in Higher Education. The Review Visit to HEI was conducted by the team on *6th November, 2014*.

1. Prof. Dr. Clive Neal Sturgess (team leader) *University of Birmingham, Emeritus Professor of Mechanical Engineering, United Kingdom*
2. Prof. Dr. Jüri Lavrentjev, *Department of Machinery, Tallinn University of Technology Professor of Automotive Engineering, Latvia*
3. Prof. Dr. Marija Malenkovska Todorova, *"St. Kliment Ohridski University, Bitola, Professor of Traffic and Transport Engineering, Macedonia*
4. Mr. Ger Reilly, *Dublin Institute of Technology, Head of School of Mechanical and Design Engineering, Dublin*
5. Dr. Vaidas Liesionis, *Machinery plant "ASTRA" (Lithuania), social partners representative.*
6. Mantas Kinderis, *Vilnius College of Technology and Design (Lithuania), student*

II. PROGRAMME ANALYSIS

2.1. Programme aims and learning outcomes

The aims of the study programme of Vehicle Engineering are in accordance with the General Requirements of the First Cycle Degree and Integrated Studies Programmes and aligned to the needs of the social partners. The main sources for publicizing the programme's objectives and expected learning outcomes are: the KTU official website, Panevėžys institute website, as well as various annual publications for entrants.

The aims of study programme are consistent with the general provisions of the Statute of KTU, the mission and development strategy of the university, as stated in the Statute of KTU, Interim Academic Regulation of KTU, as well as KTU Academic Code of Ethics.

The programme learning outcomes are comprehensive, appropriate, and of the correct standard for the 1st Cycle Bachelors degree being accredited. The module learning outcomes are pinned to the programme learning outcomes, which is good practice. However, in some cases the module learning outcomes are very detailed (up to 17 for one module, P190B003), which leads to many assessments, and should be reviewed. In other cases there are three Modules with no Learning Outcomes (T210B165, T110B101, T210B021), which is unacceptable.

The previous review highlighted the need for more modern languages. Modern language options at current programme are available for the students, but the take-up is low. More should be done to encourage the take-up of modern foreign languages.

The learning outcomes are regularly reviewed at the Faculty meetings, in close collaboration with the stakeholders, through surveys and questionnaires, as confirmed on the visit. The Vehicle Engineering first cycle programme results are fully compatible with the EUR-ACE accreditation standards for engineering in Europe.

KTU-PI have recently (2014-09-08) increased the credits of the specialisation in Vehicle Engineering to 30 credits. This has resulted in a reduction of credits for some other modules in the study programme. Although the updated Study Plan was presented, it could not be included in this review but is considered very commendable, and bodes well for the future. This was a direct response to requests from social partners, and a recommendation from the previous review showing the responsiveness of KTU-PI. The programme and Module Learning Outcomes should be reviewed to ensure they are all compatible with the updated specialisation.

The programme offered is called “Vehicle Engineering” which is considered to be a sufficiently general degree title, and the Learning Outcomes are aligned to that. Furthermore, the

specialisation at KTU-PI is in “Repair and Maintenance” which figures in the Learning Outcomes for Modules and that of the final Project. However, from the titles and content of the final projects and the laboratories there appears to be little emphasis on Repair and Maintenance but rather bigger focus on design, and the focus of the specialisation should be reviewed to align it more closely with practice.

2.2. Curriculum design

The Study plan fully corresponds to the General Requirements of the First Cycle Degree and Integrated Studies Programmes and General Technological Sciences (Engineering). The duration of full-time studies is 4 years, and that for part-time studies 6 years. The programme consists of 240 credits (within the allowable range from 210 to 240). The full-time study programme consists of 8 semesters with 30 credits in each, while the part-time study consists of 12 semesters with 20 credits in each. The number of subjects every semester meets the requirements. The updated Study Plan was presented to the experts, it could not be included in this review but is considered very commendable, and bodes well for the future. This was a direct response to requests from social partners

All the various parts of the study programme are described in the SER and are within the guidelines. During theoretical lectures students get the necessary knowledge in the various relevant subjects. This knowledge is put into practice during practical work and individual tasks. Competence and skills are developed while performing laboratory work, writing course papers, and also in practice. The curriculum overall allocates 48% for theoretical lectures, and 52% for practice and lab works out of total classroom hours. This balance is very favourable and to be commended. The matrix of the interrelationships between modules and learning outcomes shows good coverage of the subject matter. 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 1st Cycle Bachelors Degree.

In general the content and methods of the subjects/modules are appropriate for the achievement of the intended learning outcomes, and the subject module learning outcomes are consistent with the programme learning outcomes for the programme of study presented. However, these need to be reviewed in the light of the increased specialisation credits. The Teaching Staff considered the increase in the credits for the specialisation improved the opportunities for students to achieve the Learning Outcomes for the programme. Also as was evident from the meeting with Students, there is little laboratory work in the first year of the

programme. This should be reviewed to give the students more practical work early in the programme to aid their motivation.

The Faculty has developed a methodological guidance for the final bachelor theses. This includes a criterion referenced marking system, which is good practice. The final bachelor theses are defended in the public qualification commission meeting in accordance of the Rector's order.

2.3. Teaching staff

The first cycle study programme of Vehicle Engineering is conducted by academic staff, whose qualifications are comprehensive, and meets the legal requirements. Teachers are appointed to this programme by order of the public tender in accordance with Description of Academic Staff Certification and Position Requirements, this is reviewed every 5 years.

The programme at KTU-PI employs 22 university teachers: 3 professors, 10 associate professors, 7 lecturers, 1 part-time teacher and 1 assistant. The vast majority of them (21) are full-time teachers. 43 per cent of the lecturers have doctoral degree in science. In the SER it is stated that the scientific research and interest fields of 17 teachers are directly related to the teaching subjects. At the time of the previous review there were concerns that there were not a sufficient number of appropriately qualified staff to teach the specialisation; it was notable from this review that this position has been rectified. There are now 5 staff teaching the specialisation, and they are research active, although not in specific fields directly related to repair and maintenance. It is recommended that KTU-PI introduce a focussed staff development programme for the new staff.

To ensure the effectiveness of the study process laboratory teaching is necessary, and the technical staff ensures that the teaching equipment is well maintained and functioning properly. 4 technicians (two of them work part-time for this programme and part-time for the other programmes) work for the Vehicle Engineering study programme and the other two (1.5 position) work only for the Vehicle Engineering programme. The majority of the teachers (15) were involved in the project work, on average one teacher takes part in two projects.

An appropriate balance of the number of teachers and students in the various forms of classes (lectures, seminars, laboratory works, practice, etc.) is ensured according to the Academic Work Accounting Regulations. The Staff Student Ratio of 1:11 is very good by international standards, but is due to falling student numbers. Recruitment of students has been falling for a number of years, and is of general concern.

During the last three years 6 teachers from overseas have arrived to teach at KTUPI, and the students of Vehicle Engineering have participated in those lectures. In the period seven

lecturers have also gone abroad. During the period analysed there was only a small change in personnel. Data on the participation of staff from the programme at scientific conferences, shows only a minority of staff are research active. This needs improvement.

From the evidence presented it is obvious that of the programme staff's training events, some staff engage in a number of activities, most do not. Also it was evident that the the number of training activities per year had declined recently. It was stated that this was due to the newly appointed staff being well qualified. This may be true in academic subject matter terms but may not be accurate in the context of their teaching/pedagogical abilities. The age distribution of academic staff according to the position and age group was presented the overall average age of the teachers is now 48 years; which is commendable.

From the findings of the latest external assessment attention was paid to motivate teachers' mobility, encourage close cooperation with business organizations and project activities. From the evidence presented it was seen that most teachers had improved their knowledge and skills in foreign languages.

2.4. Facilities and learning resources

The students of the Vehicle Engineering programme are taught in two places. The first location is in the premises of the Faculty of Technologies, and the second is the premises of the Faculty of Management and Administration. The main 100 m² Vehicle Engineering laboratory is designed for 30 students. There is a specialized classroom for the students of the Vehicle Engineering programme, where 28 students can work at one time. Also in the premises of the Faculty of Technology there is another laboratory for the students of Vehicle Engineering, where 15 students can work at a time. The premises meet the requirements of work safety and hygiene. The students are given the safety instructions and sign in to the safety register of the laboratory.

The laboratory for the specialized subjects consists of the laboratory of transport engineering, automotive design and repair, the metrology laboratory, and the research laboratory of environmental pollution and noise. These laboratories are well equipped and the laboratories also have a number of automotive components and equipment cross-sections. The environment pollution and noise scientific laboratory contains equipment for carrying out reasearch related to noise, vibrations and their impact to humans.

During the period of this review the premises and laboratory equipment of the department have been constantly upgraded, the details of which were given in the SER. KTU PI students can also use the laboratory of KTU Faculty of Mechanical Engineering and Mechatronics, which was renewed in 2013. The laboratory of automotive design and repairs was designed for the modules

“Constructions of Automobile Mechanisms”, “Machining Processes and Technologies of Means of Locomotion”, “Diagnostics of Vehicles” and others. The lab is also supplied with universal tools, a fume analyser, and tools for diagnostics.

The premises for the practical studies are adequate both in terms of the size and quality, and in terms of the laboratory and computer equipment available. However, as yet the laboratories do not have many pieces of equipment for modern powertrains, such as hybrid drives etc. and should be upgraded. The engine laboratory could be modernised related to hybrid technologies in the future.

The students on both full-time and part-time studies have professional practice in the last term. This is the time when the students have studied the majority of modules and the practice timing is appropriate. A tripartite agreement is signed with the hosting company, and the students have supervisors from the university and the host company. All students are offered places for professional practice and some students have the practice sessions in the companies for which they work. Panevezys institute has agreements with over a dozen companies to carry out the professional practice. KTU-PI have excellent interactions with the social partners who provide practice opportunities, take part in syllabus reviews, and final project commissions, the interaction with the social partners is commendable.

The students on Vehicle Engineering programme can use the reading hall located in the Faculty of Technologies and the main library-reading hall located in the Faculty of Management and Administration. The working hours of the libraries is revised and matched to the students' wishes (i.e. extended during the examination period). The library subscribes 3 electronics data bases: Ebrary, SpringerLINK, Synthesis Digital Library of Engineering and Computer Science; also 2 bases for information editions and 17 for scientific journals and periodicals. All the computers located at the University have access to these data bases. The students were very complimentary about the quality of the library learning resources, saying that they could find information from any source.

2.5. Study process and student's performance assessment

Admission to the first course of Vehicle Engineering programme is according to the Common Admission system in Lithuania Higher Education Institutions, under Rules and Regulations certified by the president of Association of Lithuania Higher Education Institutions for Organization of Common Admission (LAMA BPO).

The order of student enrolment to the first cycle (bachelor) study programmes is defined by the Rules of Student Enrolment to Kaunas University of Technology 2013 which also defines

the enrolment order and conditions, structure of competition score, enrolment stages and dates, fees, contracts and study fees. Additional information is presented in the annual publication „KTU Study Programmes“, University and Faculty websites (for Entrants) and in the website of Lithuanian Higher Education Association for General Admission. The study programme of Vehicle Engineering does not have any special requirements for admission.

The competition score to the Vehicle Engineering study programme over the last five years has varied quite significantly. The lowest score in the full-time studies was only 2.8 in 2010/2011. The highest score in the full-time studies was 19.77 in 2008/2009.

The analysis of the number of students showed that the highest wastage happens during the first year of studies, after that the number of students only changes by a small number. To decrease the number of students' wastage the additional lectures of mathematics and foreign languages are organized in the faculty; every lecturer sets the time for additional consultations and helps students solve their problems, which is laudable. However, consideration should be given to raising the lowest entry scores, this should decrease wastage, and decrease the amount of staff time required for additional tutoring.

The study modules and facilities are adequate for the students to achieve the LO's of the programme, and it was affirmed in the meeting with staff that the increase in the specialisation will enhance this aspect of the programme. For part-time students KTU-PI organise lectures on Saturdays to assist student attendance, this is commendable. However, some of the module learning outcomes vary widely, from zero to 14. The module LO's should be reviewed to ensure consistency.

The students, together with the teaching staff and supervisors can carry out research and present the findings in the Faculty annual international students' scientific conference 'Technology Science Today and Tomorrow' and in KTU exhibition "KTU Technorama". It is a positive attribute that more students have presented their research findings in KTU PI scientific conference, as well as in the international conference ITELMS. However only a small number of students (2-3 per cent) take part in other higher school students' conferences.

Only a small number of students go to foreign universities each year and no foreign students arrived to study in the programme of Vehicle Engineering. In 2012-2013 the students together with their teachers took part in the Europe Union funded project INOSTARTAS, where they gained theoretical knowledge as well as visiting 9 successfully companies, to get acquainted with their activities and explore possibilities for employment. Foreign exchange is inhibited both by finance, and that the programmes are taught in Lithuania. However, more effort is needed to increase the number of students on international exchanges.

All students who need a living place in Panevėžys, get a room in KTU Panevėžys Institute dormitory. Every room has free Internet connection.

The student assessment system was described in detail in the SER, and according to the Interim Academic Regulations of KTU, to assess knowledge, skills and abilities the ten-grade criterion assessment scale and accumulative assessment scheme are applied, which encourages systematic work during all semesters. The student's progress is discussed every semester. The assessment systems are thorough and conform to the regulations.

At the end of the Vehicle Engineering programme students complete their final bachelor diploma thesis in accordance with to the Rector's decree No. A-879 (29/12/2006). The methodological requirements were published in KTU Panevėžys Institute in 2009 for the Vehicle Engineering programme. These are reviewed every five years.

Over the last five years' 98 students graduated from the Vehicle Engineering study programme. The information about graduate employment and career are surveyed. It was stated in the SER that about 68 per cent graduates of the Vehicle Engineering study programme work in their specialty and some of them go on to study at the master's level. It was confirmed in the meeting with the social partners that they are very supportive of the specialisation offered by the University, and think that it matches with local needs with graduates being employed in the industry.

After considering the conclusions and recommendation of the latest programme assessment and in order to increase the number of entrants to the Vehicle Engineering study programme, the University developed an enhanced strategy to attract students including visits to schools, lectures to Schoolchildren in the University, visits to KTU PI laboratories are organized together with exhibitions and fairs. A new website has been created (www.studijospanevezyje.lt), where the information about KTU PI study programmes is provided, etc. In order to decrease the student wastage and to involve students in the engineering activities projects are offered, for example, electric car construction, autonomous mobile robot design and production, and so on. It was the view of staff that these initiatives are proving successful although no documentary evidence could be provided.

2.6. Programme management

The programme management at State level, University level, Faculty level, and Departmental level all appear to be in conformity with regulations.

The assessment of the program management is carried out according to the Statute of KTU and Interim Academic Regulations of KTU; the programme administration and internal

quality assurance program activity is managed and coordinated by the Department of Strategic Planning and Performance. The programme structure and contents are reviewed annually, according to the schedule; the subjects are reviewed and renewed every three years.

The Faculty of Technologies at KTU-PI does not have its own Study Programme Committee, as it carries out the Vehicle Engineering study programme of KTU Mechanical Engineering and Mechatronics Faculty. It was stated in the Self Evaluation Report that in any discussions on curricula in the faculty Study Programme Committee (SPC) meetings are held with a representative from students' body present. However, the final decision regarding the changes are made by the faculty SPC at KTU. Essential curriculum changes are then approved by the University Senate. It was apparent from the meeting with Administrative staff that, at present, the Faculty at KTU-PI only have one representative on the SPC at KTU. An application for an additional place has been made, but so far no answer as been received. It was considered by the Review team that programme management should be devolved to KTU-PI, particularly now that the specialisation has been doubled. This would lead to much more active involvement of the staff at KTU-PI.

The Internal Education Quality Assurance System is based on an internal system of quality assurance measures. Evidence of the Quality Manual and procedures together with the annual activity plan were provided on the visit.

External stakeholders-employers take part in the Programme quality assessment and quality improvement, also Panevezys city business representatives hold meetings with KTU Panevezys Institute administration and researchers on a regular basis. During these meetings issues related to co-operation, the students academic level, the need for new competencies, changes in the program and the demand for professionals are discussed. It was as a result of these discussions that the specialisation was increased from 15 to 30 credits, showing that the University is receptive to inputs from stakeholders.

It was found that there are a plethora of means of obtaining feedback used by the University, such as stakeholder surveys, student surveys, and feedback from students, but there was no clear process for aggregating the results and pursuing the changes.

The Study program management and quality assurance process is publicised in an academic information system developed by the University specifically for this purpose. Regularly updated information database (*Livelink*) provides a detailed sequence of decision-making and program quality assurance review and approval process. The Study information database is freely available at KTU website.

The Website of the University provides publicly available information about the study program external evaluation results. The Students have the right to assess the quality of teaching, study provisions and study programs. Faculties and other units, program committees must be responsible to develop programs and accreditation documents of the performance of the departments, taking into account the comments and suggestions made by experts in order to improve the quality programs and activities of the departments. Access to the website was provided during the visit.

The study programme Vehicle Engineering is accredited until December 31, 2014. The summary of the latest study programme assessment conclusions was provided. The most important changes were related to the improvement in the staff qualification and student participation in the international exchange programmes. Compared to the last assessment results, the number of scientific projects has increased and more attention was paid to the meeting with the social partners. These changes were confirmed during the visit.

III. RECOMMENDATIONS

1. The specialisation at KTU-PI is in “Repair and Maintenance” which figures in the Learning Outcomes for Modules and that of the final Project. However, from the titles and content of the final projects there appears to be little emphasis on Repair and Maintenance, and the focus of the specialisation should be reviewed to align it more closely with practice.
2. It was considered by the Review team that programme management should be devolved to KTU-PI, particularly now that the specialisation has been doubled. This would lead to much more active involvement of the staff at KTU-PI.
3. The programme and Module Learning Outcomes should be reviewed to ensure they are all compatible with the new specialisation. Some of the module learning outcomes vary widely, from zero to 14. The module LO’s should be reviewed to ensure consistency
4. Consideration should be given to raising the lowest entry scores, this should decrease wastage, and decrease the amount of staff time required for additional tutoring.
5. It was found that there are a plethora of means of obtaining feedback used by the University, but there was no clear process for aggregating the results and pursuing the changes, and a strategy should be devised to enhance this process.
6. There is little laboratory work in the first year of the programme. This should be reviewed to give the students more practical work early in the programme to aid their motivation.
7. As yet the laboratories do not have many pieces of equipment for modern powertrains, such as hybrid drives etc. Therefore modernisation should always be on agenda to reflect current situation.
8. More should be done to encourage the take-up of modern foreign languages, and encourage international exchanges.
9. It is recommended that KTU-PI introduce a focussed staff development programme for new members of staff.

IV. EXAMPLES OF EXCELLENCE (GOOD PRACTICE)¹

1. KTU-PI have recently (2014-09-08) increased the credits of the specialisation in Vehicle Engineering to 30 credits,. Although the Study Plan was presented, it could not be included in this review but is considered very commendable, and bodes well for the future. This was a direct result of a request by social partners, and is evidence of the responsiveness of KTU-PI.
2. There is a close collaboration with various stakeholders in order to provide regular reviewing of learning outcomes. KTU-PI have excellent interactions with the social partners who provide practice opportunities, take part in syllabus reviews, final project commissions, the interaction with the social partners is commendable.
3. The curriculum allocates 48% for theoretical lectures, and 52% for practice and lab works out of total classroom hours. This balance is very favourable and to be commended.

¹ if there are any to be shared as a good practice
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V. SUMMARY

Programme aims and Learning Outcomes

The programme aims and learning outcomes are well defined, clear and publicly accessible; they are comprehensive, appropriate, and of the correct standard for the 1st Cycle Bachelors degree being accredited. They are publicly accessible via the website and a number of other sources.

There is potential confusion as the State Code for the programmes at KTU and KTU Panevėžys Institute are the same. This should be clarified. The magnitude of the specialisation has been doubled, as a result of input from the social partners*

Curriculum Design:

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 1st Cycle Bachelors 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, although they need to be reviewed to ensure consistency.

The content of the programme needs to be reviewed as the general coverage is good, but the specialist topics need to be examined to make sure they are current.

Teaching Staff :

The study programme is provided by staff meeting legal requirements, and the qualifications of the teaching staff are adequate to ensure learning outcomes. This has been significantly improved since the last review, although it is considered that a focussed staff development programme should be introduced for new staff. The Staff Student Ratio of 1:11 is very favourable by international comparisons*, and teaching staff turnover is low and able to ensure an adequate provision of the programme. The staff development activities are reviewed every 5 years.

Facilities and learning resources:

The premises for studies are adequate both in their size and quality, and the teaching and learning equipment (laboratory and computer equipment, consumables) are generally adequate both in size and quality. However, more modernisation should always be on agenda.

The University has excellent arrangements for students' practice*.

The teaching materials (textbooks, books, periodical publications, databases) are adequate and accessible, and the students were very complimentary on this aspect of the provision.

Study Process and Students' Performance Assessment

There is a wide variation in the admission requirements which will contribute to large wastage in the first year. This should be reviewed.

Students should be more encouraged to participate in research, artistic and applied research activities. Students have opportunities to participate in student mobility programmes; a small number of students participate in student mobility opportunities.

The assessment system of students' performance is clear, adequate and publicly available, and the majority of graduates meet the programme providers' expectations. A reasonable proportion of the graduates find employment within the specialisation, and the transport economy of the region is developing.

Programme Management:

There is no SPC at KTU-PI. It is considered that the programme management should be devolved from KTU to KTU-PI, particularly now that the specialisation has doubled from 15 to 30 credits. There is a multiplicity of systems for obtaining feedback. It is not clear how they are co-ordinated, this should be reviewed.

It is not clear how the outcomes of internal and external evaluations of the programme are used for the improvement of the programme; this requires an organogram of the administrative processes

* Denotes commendable practice.

VI. GENERAL ASSESSMENT

The study programme *Vehicle Engineering* (state code – 612E20001) at Kaunas University of Technology (Panevėžys faculty) is given a **positive** evaluation.

Study programme assessment in points by evaluation areas.

No.	Evaluation Area	Evaluation of an area in points ²
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:

Prof. Dr. Clive Neal Sturgess

Grupės nariai:

Team members:

Prof. Dr. Jūri Lavrentjev

Prof. Dr. Marija Malenkovska Todorova

Mr. Ger Reilly

Dr. Vaidas Liesionis

Mantas Kinderis

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VI. APIBENDRINAMASIS ĮVERTINIMAS

Kauno technologijų universiteto studijų programa *Transporto priemonių inžinerija* (valstybinis kodas – 612E20001) vertinama **teigiamai**.

Eil. Nr.	Vertinimo sritis	Srities įvertinimas, balais*
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	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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V. SANTRAUKA**Programos tikslai ir studijų rezultatai**

Programos tikslai ir studijų rezultatai yra aiškiai apibrėžti ir viešai skelbiami; jie yra išsamūs, tinkami ir atitinka pirmosios pakopos studijoms taikomus standartus. Su programos tikslais ir studijų rezultatais galima susipažinti interneto svetainėje, jie taip pat skelbiami kituose šaltiniuose. Socialiniams partneriams pasiūlius, specializacijos apimtis buvo padvigubinta.

Programos sandara

Programos turinys atitinka teisinius reikalavimus, o studijų dalykų ir (arba) modulių turinys – studijų pobūdį ir lygį. Dalykų moduliai atitinka pirmosios pakopos studijoms keliamus reikalavimus ir yra tinkami atsižvelgiant į numatytus studijų rezultatus. Dalykų modulių rezultatai iš esmės atitinka programos studijų rezultatus, nors jie turėtų būti peržiūrėti, siekiant užtikrinti jų nuoseklumą. Turėtų būti persvarstytas ir programos turinys; nors bendra programos apimtis yra tinkama, tačiau specialybių dalykų tematika turi būti iš naujo apsvastyta ir tinkamai atnaujinta.

Pedagoginis personalas

Programoje dirbančių pedagogų kvalifikacija atitinka teisinius reikalavimus, ir yra pakankama, norint siekti apibrėžtų studijų rezultatų. Nuo praėjusio vertinimo ši sritis pagerėjo, nors, vertinimo grupės nuomone, naujai priimti darbuotojai turėtų būti supažindinami su darbuotojų kvalifikacijos kėlimo programa. Pagal tarptautinius standartus dėstytojų ir studentų santykis 1:11 yra labai palankus, dėstytojų kaita nėra didelė, ir jie gali užtikrinti, kad programa būtų tinkamai įgyvendinama. Darbuotojų kvalifikacijos kėlimo veikla apsvarstoma kas penkerius metus.

Materialieji ištekliai:

Studijoms skirtos patalpos yra tinkamos tiek dydžiu, tiek kokybe; tą patį galima pasakyti apie mokymo ir mokymosi įrangą (laboratorijų ir kompiuterinę įrangą, mokymosi priemones). Tačiau visos mokymuisi skirtos priemonės turėtų būti nuolat atnaujinamos. Universitetas yra sudaręs puikias sąlygas studentų praktikai. Mokymuisi skirtos priemonės (vadovėliai, knygos, periodiniai leidiniai, duomenų bazės) yra pakankamos bei studentams prieinamos, ir studentai apie aprūpinimą jomis atsiliepią labai gerai.

Studijų procesas ir studentų vertinimas

Priėmimo į studijas reikalavimai yra labai platūs, dėl to daug studentų nubyra pirmaisiais studijų metais. Tai turėtų būti peržiūrėta.

Studentai turėtų būti aktyviau skatinami dalyvauti mokslo tiriamojoje, meninėje ir taikomojoje veikloje; nors studentams sudarytos galimybės dalyvauti judumo programose, kol kas tuo pasinaudoja tik labai nedaugelis.

Studentų pasiekimų vertinimo tvarka yra aiški, tinkama ir viešai skelbiama; dauguma programos absolventų pateisina jos vykdytojų lūkesčius. Nemaža absolventų dalis randa darbą pagal specializaciją, o rajono transporto ūkis sparčiai vystosi.

Programos vadyba

KTU-PI nėra studijų programos komiteto. Vertinimo grupės nuomone, programos apimtį padidinus nuo 15 iki 30 kreditų, jos valdymas turėtų būti iš KTU perduotas KTU-PI. Programoje naudojamos įvairios grįžamojo ryšio gavimo sistemos. Tačiau neaišku, kaip tokios grįžamojo ryšio rinkimo sistemos yra koordinuojamos.

Lieka neaišku, kaip programos vidaus ar išorinio vertinimo rezultatai panaudojami tolesniam programos tobulinimui; tam būtina sudaryti administracinių procesų organogramą. <...>

III. REKOMENDACIJOS

1. KTU Panevėžio institutas (KTU-PI), kaip nurodoma modulių studijų rezultatuose ir baigiamuosiuose darbuose, specializuojasi remonto ir eksploatacijos srityje. Tačiau, sprendžiant pagal baigiamųjų projektų pavadinimus ir turinį, remonto ir eksploatacijos temai nėra skiriama pakankamai dėmesio; todėl specializacijos apibrėžtis turėtų būti peržiūrėta ir labiau priartinta prie praktikos.
2. Vertinimo grupės nuomone, programos valdymas turėtų būti perduotas KTU-PI, ypač atsižvelgiant į tai, kad dvigubai padidėjo specializacijos apimtis. Tai padėtų KTU-PI pedagoginiam personalui daug aktyviau dalyvauti įgyvendinant programą.
3. Programos ir modulių studijų rezultatai turėtų būti peržiūrimi užtikrinant jų geresnę atitiktį naujai specializacijai. Kai kurie modulių studijų rezultatai vertinami labai skirtingai, t. y. nuo 0 iki 14. Modulių studijų rezultatai turėtų būti peržiūrimi, siekiant užtikrinti jų nuoseklumą.
4. Būtina padidinti žemiausius priėmimo į studijas balus – taip sumažėtų nubyrančių studentų skaičius, o pedagoginis personalas mažiau laiko turėtų skirti papildomam konsultavimui.
5. Vertinimo grupė pažymėjo, kad universitete taikoma daugybė grįžamojo ryšio gavimo būdų, tačiau kadangi nėra aiškaus tokių atsiliepimų apibendrinimo ir pokyčių įgyvendinimo proceso, turėtų būti parengta šio proceso tobulinimo strategija.
6. Pirmaisiais studijų metais per mažai laiko skiriama darbui laboratorijose. Tai turėtų būti apsvarstyta, suteikiant progos studentams atlikti daugiau praktinių užduočių ankstyvuose programos etapuose ir stengiantis juos labiau motyvuoti.

7. Vis dėlto laboratorijos nėra aprūpintos pakankama šiuolaikine transmisijų įranga, tokia kaip mišriosios pavaros, ir kt. Atsižvelgiant į esamas rinkos sąlygas, laboratorijų įranga turėtų būti nuolat atnaujinama.
8. Daugiau pastangų reikėtų dėti skatinant mokytis užsienio kalbų ir dalyvauti tarptautinėse mainų programose.
9. KTU-PI rekomenduojama parengti kvalifikacijos kėlimo programą, skirtą naujiems pedagoginio personalo nariams.

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