STUDIJŲ KOKYBĖS VERTINIMO CENTRAS
CENTRE FOR QUALITY ASSESSMENT IN HIGHER EDUCATION

ELECTRONICS ENGINEERING FIELD OF STUDY

Šiauliai State Higher Education Institution

EXTERNAL EVALUATION REPORT

Expert panel:

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2. Academic member: dr. Mário Pereira Véstias
3. Academic member: dr. Tamás Pardy
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I. INTRODUCTION

1.1. OUTLINE OF THE EVALUATION PROCESS

The field of study evaluations in Lithuanian higher education institutions (HEIs) are based on the following:

- Procedure for the External Evaluation and Accreditation of Studies, Evaluation Areas and Indicators, approved by the Minister of Education, Science, and Sport;
- Methodology of External Evaluation of Study Fields approved by the Director of the Centre for Quality Assessment in Higher Education (SKVC);
- Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

The evaluation is intended to support HEIs in continuous enhancement of their study process and to inform the public about the quality of programmes within the field of study.

The object of the evaluation is all programmes within a specific field of study. A separate assessment is given for each study cycle.

The evaluation process consists of the following main steps: 1) Self-evaluation and production of a self-evaluation report (SER) prepared by an HEI; 2) A site visit by the review panel to the HEI; 3) The external evaluation report (EER) production by the review panel; 4) EER review by the HEI; 5) EER review by the Study Evaluation Committee; 6) Accreditation decision taken by SKVC; 7) Appeal procedure (if initiated by the HEI); 8) Follow-up activities, which include the production of a Progress Report on Recommendations Implementation by the HEI.

The main outcome of the evaluation process is the EER prepared by the review panel. The HEI is forwarded the draft EER for feedback on any factual mistakes. The draft report is then subject to approval by the external Study Evaluation Committee, operating under SKVC. Once approved, the EER serves as the basis for an accreditation decision. If an HEI disagrees with the outcome of the evaluation, it can file an appeal. On the basis of the approved EER, SKVC takes one of the following accreditation decisions:

- **Accreditation granted for 7 years** if all evaluation areas are evaluated as exceptional (5 points), very good (4 points), or good (3 points).
- **Accreditation granted for 3 years** if at least one evaluation area is evaluated as satisfactory (2 points).
- **Not accredited** if at least one evaluation area is evaluated as unsatisfactory (1 point).

If the field of study and cycle were **previously accredited for 3 years**, the re-evaluation of the field of study and cycle is initiated no earlier than after 2 years. After the re-evaluation of the field of study and cycle, SKVC takes one of the following decisions regarding the accreditation of the field of study and cycle:

- To be accredited for the remaining term until the next evaluation of the field of study and cycle, but no longer than 4 years, if all evaluation areas are evaluated as exceptional (5 points), very good (4 points) or good (3 points).
- To not be accredited, if at least one evaluation area is evaluated as satisfactory (2 points) or unsatisfactory (1 point).

1.2. REVIEW PANEL

The review panel was appointed in accordance with the Reviewer Selection Procedure as approved by the Director of SKVC.

The composition of the review panel was as follows:

1. Panel chair: dr. Dmitrijs Pikulins;
2. Academic member: dr. Mário Pereira Véstias;
3. Academic member: dr. Tamás Pardy;
4. Social partner representative: dr. Donatas Pelenis;
5. Student representative: Mindaugas Paškauskas.

1.3. SITE VISIT

The site visit was organised on 25 April 2025 onsite.

Meetings with the following members of the staff and stakeholders took place during the site visit:

- Senior management and administrative staff of the faculty(ies);
- Team responsible for preparation of the SER;
- Teaching staff;
- Students;
- Alumni and social stakeholders including employers.

There was a need for translation during the meeting with Senior management and administrative staff of the faculty(ies); Team responsible for preparation of the SER; Teaching staff; Alumni and social stakeholders including employers.

1.4. BACKGROUND OF THE REVIEW

Overview of the HEI

Šiauliai State College (Šiaulių valstybinė kolegija, ŠVK) is a state higher education institution in Lithuania providing first cycle college-level studies. Established in 2002 through the reorganisation of former higher technical and medical schools, ŠVK delivers practical, professionally oriented education. The Institution comprises two faculties: the Faculty of Health Care and the Faculty of Business and Technologies, which includes five departments. As of the 2023–2024 academic year, ŠVK had a total of 1,631 students, with 1,055 enrolled in the Faculty of Business and Technologies. ŠVK operates under a Statute and strategic documents that define its mission, objectives, and governance through the ŠVK Council, Academic Council, and the Director as the sole governing body.

Overview of the study field

The Electronics Engineering study field at Šiauliai State College (ŠVK) is represented by the Automotive Electronics programme, the only study programme in this field at the Institution. Positioned within the Faculty of Business and Technologies, the Engineering Sciences Department implements the study field, with strategic oversight from the Electronics Engineering Field Study Committee. The programme supports ŠVK's mission to provide practice-oriented and competence-based studies, aligned with regional labour market demands, particularly in the Šiauliai area. Partnerships with local employers, including companies servicing the NATO airbase, help shape the curriculum and provide students with internship and employment opportunities. Scientific activities in the field are supported through INOSTART student projects, participation in applied research, and the Institution's integration in the NEOLAiA European University Alliance, aiming to strengthen research and international collaboration.

Previous external evaluations

The Automotive Electronics programme underwent its most recent external evaluation in 2015. Following the evaluation, Šiauliai State College (ŠVK) implemented the recommended improvements, which were detailed in a Programme Progress Report submitted thereafter. These improvements contributed to subsequent programme updates, including revisions approved by the Academic Council in 2021 and 2024, aligning the programme with labour market needs and updated legal requirements.

Documents and information used in the review

The following documents and/or information have been requested/provided by the HEI before or during the site visit:

- Self-evaluation report and its annexes:
    - Full-time and part-time study plans;
    - List of graduation projects;
    - List of teachers.
- Subject description summary (ENG).
- Final theses (LT).

Additional sources of information used by the review panel:

The following additional sources of information have been used by the review panel:
Information provided by participants of the onsite visit to the VIKO.

II. STUDY PROGRAMMES IN THE FIELD

First cycle/LTQF 6

Title of the study programme	**Automotive Electronics**
State code	6533EX003
Type of study (college/university)	Higher education college studies
Mode of study (full time/part time) and nominal duration (in years)	Full-time studies (3 years) Part-time studies (4 years)
Workload in ECTS	180
Award (degree and/or professional qualification)	Professional Bachelor of Engineering Sciences
Language of instruction	Lithuanian
Admission requirements	Secondary education
First registration date	2 July 2020
Comments (including remarks on joint or interdisciplinary nature of the programme, mode of provision)	

III. ASSESSMENT IN POINTS BY CYCLE AND EVALUATION AREAS

The **first cycle** of the Electronics Engineering field of study is given a **positive** evaluation.

No.	Evaluation Area	Evaluation points*
1.	Study aims, learning outcomes and curriculum	3
2.	Links between scientific (or artistic) research and higher education	4
3.	Student admission and support	4
4.	Teaching and learning, student assessment, and graduate employment	4
5.	Teaching staff	3
6.	Learning facilities and resources	4
7.	Quality assurance and public information	4
	Total:	26

*

1 (unsatisfactory) - the area does not meet the minimum requirements, there are substantial shortcomings that hinder the implementation of the programmes in the field.
2 (satisfactory) - the area meets the minimum requirements, but there are substantial shortcomings that need to be eliminated.
3 (good) - the area is being developed systematically, without any substantial shortcomings.
4 (very good) - the area is evaluated very well in the national context and internationally, without any shortcomings.
5 (exceptional) - the area is evaluated exceptionally well in the national context and internationally.

IV. STUDY FIELD ANALYSIS

AREA 1: STUDY AIMS, LEARNING OUTCOMES AND CURRICULUM

1.1.	Programmes are aligned with the country's economic and societal needs and the strategy of the HEI

FACTUAL SITUATION

1.1.1. Programme aims and learning outcomes are aligned with the needs of the society and/or the labour market

The alignment of the study programme's aims and learning outcomes with labour market needs is an essential criterion from the perspective of a social partner. In the field of engineering—especially within the context of transport and automotive electronics—it is crucial that graduates are equipped not only with theoretical knowledge but also with the ability to apply this knowledge in practice using up-to-date tools and systems. Competencies such as diagnostics, microcontroller programming, CAN bus systems, and familiarity with digitalization and intelligent systems are increasingly important in both Lithuanian and international contexts.

The self-evaluation report (SER, pp. 5–7) states that the programme aims to prepare specialists who can install, diagnose, maintain, and repair electronic and mechatronic systems in transport using innovative technologies. The SER also references a 2021 regional employer survey indicating demand for engineering specialists, including electronics and mechatronics (SER, p. 7). This reflects an awareness of relevant regional labour market needs. While the study aims and learning outcomes are formally aligned with the Engineering study field descriptor and national policies, the documentation does not provide concrete evidence of systematic updates to learning outcomes based on structured employer feedback or competency gap analysis.

The programme acknowledges the relevance of technological trends such as IoT and intelligent systems (SER, p. 6), and specific industry-relevant tools—such as AutoCAD, BOSCH ESI[tronic], JALTEST, MPLAB, and MultiSim—are listed in the curriculum appendices. It is also not evident in which subjects students engage with these tools or how practical competencies are developed in alignment with employer expectations. Similarly, while business stakeholders are mentioned as participants in programme committees and the self-assessment process, no specific examples show that their feedback has led to tangible changes in programme content or structure.

To further strengthen this criterion, it would be beneficial to provide evidence of how employer feedback—especially regarding skills in diagnostics, embedded systems, and automation—is translated into updates to course content or teaching methodologies. Integrating specific tools used in the industry into subject descriptions and ensuring that students work with them during their studies would help bridge the gap between academic preparation and workplace requirements. Structured consultations with employers on priority skills and periodic review of learning outcomes based on those findings would also enhance the programme's alignment with labour market expectations.

1.1.2. Programme aims and learning outcomes are aligned with the HEI's mission, goals, and strategy

The Automotive Electronics programme clearly intends to develop practical competencies in automation, electronics, and transport engineering. Its aims are formally aligned with the College's strategic documents and the 2023 national descriptor of the engineering study field. However, limited evidence shows how these aims are systematically embedded into course-level content or updated in response to strategic priorities. Although technological trends such as Industry 4.0 and IoT are acknowledged in the documentation, their integration into specific learning modules or practical assignments is not explicitly detailed.

Social partners are involved in programme committees, but their input is not illustrated through concrete examples of curricular change or the introduction of industry-relevant tools or themes. Furthermore, graduate career data is not sufficiently segmented to show the specific fields (e.g. design, diagnostics, testing) where alumni are employed, nor is it clear how this information informs ongoing curriculum development. While students engage in internships, there is little explanation of how this practical experience is aligned with cutting-edge industry tools (e.g. CAN analyzers) or strategic skills.

Lecturers and students are involved in quality assurance processes, but the self-evaluation report does not clarify how their feedback results in real changes. Similarly, the involvement of social partners in giving feedback is noted, yet its systematic analysis and implementation are not well documented. This limits the ability to assess whether a strong internal quality culture is functioning effectively.

ANALYSIS AND CONCLUSION (regarding 1.1.)

The study programme is formally aligned with national strategic documents and the engineering study field descriptor. It aims to prepare specialists in transport and automotive electronics; however, there is insufficient evidence of how employer feedback, technological trends (e.g., CAN systems, diagnostics, digitalisation, embedded systems), and graduate/student input are systematically used to update the programme content. The involvement of business stakeholders in committees is acknowledged, but their actual influence on curriculum changes is not demonstrated. Implementing a structured system for competency gap analysis and employer consultations is recommended, ensuring that course descriptions and practical skill development are regularly updated. This would enhance the programme's relevance to labour market needs and the strategic goals of the higher education institution.

1.2.	Programmes comply with legal requirements, while curriculum design, curriculum, teaching/learning and assessment methods enable students to achieve study aims and learning outcomes

FACTUAL SITUATION

1.2.1. Programmes comply with legal requirements

Higher education college studies. First cycle - professional bachelor.

	Requirement	Programme FullT / PartT
Total credits	>= 180	180 / 180
Study field/year credits	>= 45	60 / 45
Study field credits	>= 120	126 / 126
Practical placements credits	>= 30	30 / 30
Final project credits	>= 9	12 / 12
Practical training hours	1/3	1786 / 1786
Contact hours	>=20% (960)	2394 / 2394
Independent work hours	>=30% (1440)	2406 / 2406
Total hours	>=4800	4800 / 4800

The study cycle is a first cycle study programme with 180 study credits, the minimum required.
The study field credits per year are according to legal requirements for both full and part-time studies.
The total number of credits allocated to achieve the outcomes of the study cycle should be at least 120. The programme under analysis has 126 study credits.

The total number of study credits for the internship should be at least 30, which is the number of credits allocated in the programme. The number of credits for the final project should be at least 9 and 12 study credits were allocated for the internship.
Full-time studies shall have 60 study credits per year, but not less than 45 credits, and parti-time studies should be at least 45 credits. The proposed programme has 60 credits each year.
The amount of contact work in the first cycle of studies shall be at least 20 per cent, and the student's independent work shall be at least 30 per cent.
Practical training hours should be at least one third of the total number of studies field credits, which is verified.
Full and part-time studies have the same number of contact and independent hours.

The programmes comply with legal requirements.

1.2.2. Programme aims, learning outcomes, teaching/learning and assessment methods are aligned

The learning outcomes of a first study cycle must span five dimensions:

- Knowledge and its application;
- Research skills;
- Special abilities;
- Social abilities;
- Personal abilities.

The SER provides the detailed contents of the subjects in the field of study. From the analysis of these there is an alignment between the learning outcomes of subjects and the teaching methodologies and assessment methods.

The main study methods are lectures, individual works, laboratory works, projects, and demonstrations. In all subjects there is a great emphasis on laboratory work which is in line with the practice learning outcomes, including special abilities in the subjects. All subjects include lectures to transmit the fundamental knowledge to accomplish the practical works. The social and personal abilities are achieved through the general subjects and through the work in groups and public presentations and demonstrations present in the contents of the subjects.

Practice is a strong component of the study cycle and determines the ability of the students to acquire most of the learning outcomes. A well-established set of methodologies is necessary among the set of laboratory classes to guarantee a coordinated practice development among the laboratory classes, which is not evident in the contents of the subjects.

The Study Program aims and learning outcomes, and assessment methods are consistent with the type and level of studies.

1.2.3. Curriculum ensures consistent development of student competences

The study program follows a traditional approach for the development of student competencies:

Year 1 – General knowledge, fundamentals and basics of main subject. Two subjects in the field of study are also introduced in the first year to motivate students

Year 2 – Intermediate knowledge of the main subject and problem analysis. Some design.

Year 3 – Advanced knowledge and problem design. Final internship and Final Thesis on a topic of relevance to companies. In the final internship, students may continue a task started in the professional practice or another.

The programme includes elective subjects in general education: philosophy, sociology, and languages.

From the subject contents it is possible to identify the interconnections between the curriculum and the required student competencies for the study cycle. The subjects guarantee the necessary knowledge and practice relative to the study field and the necessary general and social competencies.

Stakeholders and Social partners are satisfied with the graduates, which indicates that students are acquiring the right competencies, including the necessary technologies. Some of the students work in areas different from the main area of their field. However, it was not possible to conclude that the competencies acquired by the students are broad enough to allow a broader approach to the labor market.

In general, students speak English and are easy to communicate with. The elective general subjects are important and contribute to this outcome.

Students and employers have said that the study cycle ensures the necessary learning outcomes. The contents of the study program reflect recent technologies with equipped laboratories. The competencies promoted by the Institution focus on the market labour.

The partial studies follow the same sequence of competencies but in a four-year plan.

The Study Program ensures the consistent development of students' competencies but are mostly technology oriented. This might limit the integration of the student in labor markets different from those directly related to the study programme.

1.2.4. Opportunities for students to personalise curriculum according to their personal learning goals and intended learning outcomes are ensured

Students may set up an individual plan within the requirements of the study plan by choosing:

- Professional foreign language (6 credits),
- Subjects of the study field (6 credits),
- Subject of general and digital competencies (3 credits).

Additionally, students may choose the professional practice places, a voluntary practice and a Graduation project

The credits obtained in academic exchange programs may be credited up to 30 credits in the field area or in a general area.

In general, there are some opportunities to personalize the individual plan, in line with a first cycle study, but the flexibility in the study field is tight.

1.2.5. Final theses (applied projects) comply with the requirements for the field and cycle

The Final Theses in the Automotive Electronics programme are implemented as applied engineering projects that address practical problems in electronics and mechatronic vehicle systems. Students select topics in coordination with their supervisors and must demonstrate both practical relevance and engineering or research-based competencies. After submission, projects are reviewed and publicly defended in front of a Qualification Commission composed of three industry representatives, one teacher, and the department head. The defense includes a presentation, Q&A, and evaluation against a minimum threshold.

In 2021, 57% of students received a final project evaluation of 7–8, and 29% received 9–10. Topics included the diagnostics and repair of electronic systems, simulation stand creation, prototype development for transport systems, and research into electronic components. Students often continue themes initiated during their internships or professional practices, providing a consistent link between workplace experience and academic work.

There were no graduates in 2022 and 2023, due to insufficient student numbers for group formation, a situation caused by demographic trends and a government-imposed threshold of 10 students for group establishment. The next graduation is scheduled for June 2025, with the programme aiming to better align thesis topics with industry needs, involving social partners more directly in the future topic selection process.

ANALYSIS AND CONCLUSION (regarding 1.2.)

The programme complies with all national legal requirements for professional bachelor studies, including credit distribution, practical training, and final project scope. This structure supports HEI's mission to provide practical, professionally oriented education.

The curriculum progression is logical and competency-focused: foundational knowledge in year one, problem-solving and design in year two, and applied practice and thesis in year three. Electives in general education (philosophy, sociology, languages) and foreign language courses support the development of soft skills. However, the absence of transversal skills such as entrepreneurship, and a lack of detailed mapping between programme outcomes, subject-level learning outcomes, teaching, and assessment methods, weakens transparency and curriculum alignment.

Students can personalize their learning path through electives, practice placements, and Erasmus+ exchange. Still, some details (e.g., list of field-specific electives) are missing.

The 2021 graduation projects demonstrate a strong orientation towards solving real-world technical challenges. Examples include:

- Design and production of hardware and software solutions (e.g. Vehicle Comfort System Unit, Dashboard for Car etc.);
- Diagnostic and monitoring systems (e.g. for Engine, Car Multimedia Diagnostics etc.);
- Automotive control projects (e.g. Remote Start).

All the provided topics reflect the direct application of knowledge and skills, demonstrating technological problem-solving, independent planning and implementation of electronic systems, and using relevant diagnostic and control tools.

According to the Descriptor of Study Cycles, the final thesis must demonstrate:

- the ability to apply professional and scientific knowledge to solve practical tasks;
- skills in data collection, analysis, leading to the development of innovations;
- the ability to autonomously plan the work and implement it;
- professional communication skills and ethical responsibility.

The Final thesis titles and description of the procedure clearly state that the **mentioned criteria are met,** as the students provide complete system design and testing, and the topics reflect actual challenges in the field of Automotive Electronics.

SER provides information on the evaluation results of final theses; However, the statistical basis is weak, as it is derived from the work of only 14 students in 2021. This limited sample size significantly restricts the ability to draw **general conclusions** about the overall quality of theses and consistency with learning outcomes.

AREA 1: CONCLUSIONS

AREA 1	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle			x		

COMMENDATIONS

1. The students can select the topic of their Final Thesis a year ahead of the defense, leading to higher defense rates, more qualitative Graduation projects and much lower withdrawal rates.

2. The number of contact hours is close to the number of independent hours, which shows a balanced distribution of time.
3. The programme demonstrates alignment with national strategic goals and the engineering study field descriptor, aiming to prepare practical specialists in transport and automotive electronics.
4. The inclusion of modern industry-relevant tools (e.g., AutoCAD, BOSCH ESI[tronic], JALTEST, MPLAB, MultiSim) in the curriculum reflects awareness of technological trends.
5. Social partners are involved in programme committees and the self-assessment process, indicating some level of stakeholder engagement.

RECOMMENDATIONS

To address shortcomings

1. Expand the development of transversal competences, including entrepreneurship, project management, and innovation skills, to better align with broader labour market needs.

For further improvement

1. The HEI is recommended to establish and document a formal procedure for ensuring that graduation project topics are systematically aligned with current industry needs and technological trends. This procedure should include:
    a. Regular consultation with industry partners to identify relevant and emerging challenges;
    b. Formal mechanisms for social partners to propose topics;
    c. Periodic review and updating of topic lists;
    d. Clear documentation of how topics are sourced, approved, and updated to maintain relevance and innovation.

    Such a procedure would strengthen the connection between academic outputs and real-world practice, further enhancing graduate employability and the applied nature of the program.
2. Guarantee a coordinated practice development among the set of laboratory classes.
3. Promote new teaching and assessment methodologies to promote motivation and lecture attendance.
4. Seminars could be promoted by teachers or college staff to talk about teaching and assessment methodologies.
5. Establish a structured and periodic consultation mechanism with employers to identify priority skills and update learning outcomes accordingly.
6. Provide concrete evidence of how employer feedback, particularly on diagnostics, embedded systems, and automation—has resulted in changes to course content, learning outcomes, or teaching methods.

AREA 2: LINKS BETWEEN SCIENTIFIC (OR ARTISTIC) RESEARCH AND HIGHER EDUCATION

2.1.	Higher education integrates the latest developments in scientific (or artistic) research and technology and enables students to develop skills for scientific (or artistic) research

FACTUAL SITUATION

2.1.1. Research within the field of study is at a sufficient level

- ŠVK focuses on applied research and encourages teachers to publish (~58% of educators related to the programme published a total of 17 national/international conference papers and 11 peer-reviewed articles). Scientific activity is included in teachers' 5-year attestation.
- ŠVK has organized in total 6 international conferences, primarily related to educational topics, and publishes 2 journals, one of which is on applied science.
- During last 3 years, 11 third-party funded research projects were concluded, related to automotive electronics and infrastructure, plus 8 INOSTART (Lithuanian government-funded SME support program for innovation) projects with societal and industrial partners. Focus areas include industrial IoT and mechatronics applied to logistics, relevant areas to EU industry 4.0. Project examples cited in SER are related to digitalization and automation in manufacturing and logistics.
- The above are in line with industry 4.0 requirements and align well with EU strategic priorities in digitalization.
- HEI needs to do more science as per the ministry mandate. Research projects' financial volume ~100kEUR from private sector, ~10k/project from state/municipal gov't, ~3-5kEUR for INOSTART projects (e.g. PoC study). Teachers can get dedicated funds for research activities (up to 30h for research/month) and publishing is rewarded.
- Teaching staff motivation to participate in science (due to reform it is now mandatory)? Lecturer reports having been involved. Associate professors have more hours available for research. 2 researchers have been admitted to staff.
- The funding situation is stable according to SER team. 3-5 R&D projects annually are funded by INOSTART program in ~3-5 kEUR volume, municipal gov't provides ~10kEUR/year, private sources provide ~100kEUR.
- Plagiarism results in expulsion and payment for studies. Thus, no cases of plagiarism were reported. Plagiarism checking software used. AI use is not prevented but monitored, and regulations are being developed.

2.1.2. Curriculum is linked to the latest developments in science, art, and technology

- Science and technology are included in students' coursework and projects, with a focus placed on IoT (communication, smart systems, robotics, telemetry), electromobility (EV, HEV, charging, management), and materials engineering (e.g. nano- and fibrous structures). Courses are updated in 3-year cycles in keeping with innovations (e.g. cloud-based tools for PCB design).
- Software tools are up to date (e.g. AutoCAD 2024, Fusion 360 etc.) and include open-source options.
- International guest lecturers presented on topics in intelligent automotive systems and AI. Lecturers assessed, including the latest advancements as an outcome of these visits.
- HEI students receive intersectoral education in automotive and transportation engineering, with training opportunities at a nearby NATO airbase.
- HEI is part of NEOLAiA initiative (includes HEIs from Germany, France, Italy etc.), an EU HEIs alliance that helps advance digital transformation.
- The curriculum includes new AI-related topics compared to SER, such as machine vision and self-driving cars. A guest lecturer from the University of Bologna lectured on them.

- According to a student with his own business, courses are not fully aligned with EVs. Students would prefer more topics related to self-driving cars, AI, cybersecurity.
- The program provides basic knowledge, but employers provide specialized knowledge. The military and local companies require 3-4 electronics students annually, and social partners confirm the need for automotive specialization.

2.1.3. Opportunities for students to engage in research are consistent with the cycle

- Annual Business, New Technologies and Smart Society conference showcases course projects' and theses' results, aligned with industrial interests.
- The KNOW project aimed to promote knowledge exchange with local and regional industry, including 12 students (~25%). Students and teachers are included in organization and execution.
- 5 students presented at international and 2 at national conferences (~14% of total).
- 5 students also participated at 3 competitions
- Students participate in applied research related to the final project via the INOSTART program (see 2.1.1). They also present at conferences, e.g., the one mentioned in SER (attendance is up to 100, and Maritime College participates). Conference presentation can be published in non-peer-reviewed journal.
- Competitions for students at city-level are organized to increase engagement.
- Students have access to Nissan Leaf EV for research, and Dynomag dynamometer system, which can also simulate road experience after calibration.
- Conference participation evidence provided by an active student.
- Lab instrumentation is upgraded with instruments allowing leading-edge research (e.g. optical table, SEM, contact angle goniometer for materials/coatings research).

ANALYSIS AND CONCLUSION (regarding 2.1.)

Main results (however brief) are in line with the report text, students' participation could be improved, but the strength of the program is the active participation and continuous improvement of lecturers. The program aligns with industry 4.0 and EU digitalization goals, and through the invitation of guest lecturers, aims to incorporate cutting-edge topics, such as AI. Nevertheless, additional consideration should be given to the application of new technologies opened by AI in areas such as manufacturing and autonomous driving.

Research funding is stable, and staff involvement in research is encouraged. Nevertheless, by next attestation in 2026, some teaching staff still does not have enough publications. Labs are well-equipped for state-of-the-art analysis (e.g. Nissan Leaf EV, dynoMAG), and are upgraded for future research directions (e.g. SEM for materials research). Students can and do work on their research projects outside regular hours. Good scientific practices are practised and are enforced (e.g. anti-plagiarism).

AREA 2: CONCLUSIONS

AREA 2	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				x	

COMMENDATIONS

1. Research directions are aligned with regional and EU interests, and staff scientific activities are supported and encouraged. Staff also exchange knowledge with the local industry.
2. Lab spaces are well-equipped and are kept up to date. Research funding is stable.
3. Strong municipal and industrial support towards HEI (e.g. lifelong learning programs, engineering gymnasium, NATO airbase providing training).

RECOMMENDATIONS

To address shortcomings

N/A

For further improvement

1. Student involvement in scientific activities should be improved further
2. While the program provides sufficient basics both according to alumni and social partners, a plan should be in place to integrate leading-edge industrial methodologies into the study program. For example, software-defined vehicles in electromobility context, self-driving cars, cybersecurity – alumni expressed a need for these topics in their career.

AREA 3: STUDENT ADMISSION AND SUPPORT

3.1.	Student selection and admission is in line with the learning outcomes

FACTUAL SITUATION

3.1.1. Student selection and admission criteria and procedures are adequate and transparent

The student selection and admission procedures at SVK are structured, criteria-based, and transparent, aligning with national standards and regulations. Admission is conducted through two main pathways: joint and direct (institutional). Joint admission, overseen by the Lithuanian Higher Institutions Association for Organizing Joint Admission (LAMA BPO), allows applicants to compete for both state-funded and non-funded study places. Direct institutional admission is handled by SVK and is limited to state non-funded places.

As of 2024, all applicants must pass three State Maturity Exams: Lithuanian language, mathematics, and one elective subject. In addition, the arithmetic average of these exam results must be at least 16 points, corresponding to a satisfactory achievement level according to national standards. Competitive admission scores are calculated from four maturity certificate subjects, with weights assigned to each: Mathematics (0.4), one science or technology subject such as IT, Physics, or Biology (0.2), a third non-repeating subject (0.2), and Lithuanian language and literature (0.2). Additional points may be awarded based on criteria set by the Ministry of Education, Science and Sport and SVK.

The Automotive Electronics is the only study programme that is in the field of Electronics Engineering, and it has shown a notable increase in enrolment. In 2023, 49 students were admitted to the programme, up from 30 in 2022 and 12 in 2021. This growth indicates rising interest and possible improvements in outreach or programme appeal.

In 2022, a drop in average scores (3.87 for full-time studies) was attributed to lower score thresholds for state non-funded places. In 2023, scores improved (4.65 for full-time, 4.17 for part-time) but remained below 2021 levels (5.61 for part-time).

During the analyzed period, 7 students enrolled in the programme (12.5%) discontinued their studies. Reasons: at his/her own request due to family, personal and other circumstances, academic failure or failure to fulfil financial obligations to the SVK.

3.1.2. Recognition of foreign qualifications, periods of study, and prior learning (established provisions and procedures)

SVK follows a formal and transparent process for recognizing foreign qualifications, periods of study, and prior learning, as outlined in the 2023 Procedure for Crediting Learning Outcomes of Partial Studies. Students from Lithuanian or foreign higher education institutions can have previously achieved learning outcomes recognized if they align with the agreed study content. Subjects and practical components completed abroad are credited without restrictions, provided they meet the expected learning achievement standards and comply with existing agreements.

ANALYSIS AND CONCLUSION (regarding 3.1.)

The student selection and admission procedures at SVK are structured, criteria-based, and transparent, aligning with national standards and regulations. As of 2024, applicants must pass three State Maturity Exams: Lithuanian language, mathematics, and one elective subject. SVK follows a formal and transparent process for recognizing foreign qualifications, periods of study, and prior learning. The Automotive Electronics is the only study programme that is in the field of Electronics Engineering, and it has shown a notable increase in enrolment. In 2023, 49 students were admitted to the programme, up from 30 in 2022 and 12 in 2021.

3.2.	There is an effective student support system enabling students to maximise their learning progress

FACTUAL SITUATION

3.2.1. Opportunities for student academic mobility are ensured

SVK has established formal procedures to support student academic mobility through participation in the Erasmus+ Programme, as outlined in the 2022 Description of the Procedure of Selection of Students, Teachers and Administrative Staff. The International Relations and Project Management Unit organizes the Erasmus+ selection process twice annually.

Despite well-developed informational support and formal agreements with 28 institutions across 13 countries, student participation remains low. In 2022–2023, no full-time students utilized mobility opportunities. Only one part-time student participated in a 3-month Erasmus+ internship in Norway.

Incoming Erasmus+ students are offered supportive measures such as mentorship, Lithuanian language courses, and the opportunity to study field-specific subjects. However, no international students enrolled during the analysed period.

As of right now to increase students' participation in mobility programmes SVK main focus is to implement Blended Intensive Programmes, because students' biggest complaint is longer periods of being abroad. This would make academic mobility programmes more appealing to students and give them an opportunity to experience studies in different environments and cultures.

3.2.2. Academic, financial, social, psychological, and personal support provided to students is relevant, adequate, and effective

Financial support is accessible through state-subsidized loans, which can cover tuition fees, partial study costs, or living expenses. Government-established procedures for awarding, administering, and repayment regulate these loans.

Accommodation is provided in two renovated dormitories with a combined capacity of 393 places, offering modern living conditions for students. Social engagement is encouraged through participation in sports, social, and scientific activities.

In 2023, SVK placed a stronger focus on psychological support. Measures included remote individual consultations with psychologists and training a student group in a research organization. This was more of a general state project for all the HEIs, because of increased remote learning hours for students. There is no special psychologist and the need for such a specialist was not expressed. There is support system in place in terms of consulting with teachers and administrative staff.

3.2.3. Higher education information and student counselling are sufficient

First-year students are introduced to the study system through introductory days and group curators, who explain study plans, schedules, assessments, fees, and support options.

Monthly meetings with student monitors are held to ensure continued communication on academic progress. Information is delivered through multiple channels, including the SVK website, information stands, and remote platforms (e.g., Moodle, Zoom, Google Meet) for those unable to attend in person.

Students also receive guidance from administrative departments and the Student Admission and Career Center, which offers career counselling, seminars, and information on further study options. The Library and Self-study Centre provides training and consultations on research tools and digital systems.

Schedule of consultations that is coordinated is available on website, but individual consultations are available as well. Teachers flexibly react to attendance, especially for part-time and working students. They can reach all the resources online. Schedules can be adjusted in terms

of laboratory work and presentations. Teachers did not express any problems and issues in terms of attendance. Part time students see theoretical classes as very valuable, but to them practical lessons are way more interesting.

From students and teachers feedback it seen that this type of engagement is working and both parties are consent with how lectures and counselling sessions are done.

ANALYSIS AND CONCLUSION (regarding 3.2.)

SVK has established structured opportunities for academic mobility, supported by formal procedures and international partnerships. However, low participation rates in mobility programs suggest a need for more effective communication or engagement strategies. Financial support is accessible through state-subsidized loans. Accommodation is provided in two renovated dormitories with a combined capacity of 393 places. First-year students are introduced to the study system through introductory days and group curators. Monthly meetings with student monitors are held to ensure continued communication on academic progress. Students also receive guidance from administrative departments and the Student Admission and Career Center.

Students have high accessibility to teachers, mainly through emails and counselling sessions. According to students, part-time classes are very valuable, but practical lessons are way more interesting. Monthly meetings between students` monitors seem to be effective, and problems that are usually schedule-related get solved. The quality of dormitories after renovation is quite good. The main reasons for low student participation in mobility programs are fear of skipping important subjects in their HEI and Lack of time for such programs because of part-time jobs.

AREA 3: CONCLUSIONS

AREA 3	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				x	

COMMENDATIONS

1. Teachers' accessibility and flexibility towards students are well developed.
2. Monthly meetings between students` monitors are a great way to ensure feedback on study processes between students and HEI staff.

RECOMMENDATIONS

To address shortcomings

N/A

For further improvement

1. Students` inclusion in mobility through Blended Intensive Programmes.

AREA 4: TEACHING AND LEARNING, STUDENT ASSESSMENT, AND GRADUATE EMPLOYMENT

4.1.	Students are prepared for independent professional activity

FACTUAL SITUATION

4.1.1. Teaching and learning address the needs of students and enable them to achieve intended learning outcomes

Both full and part-time study plans are available. The part-time study plan allows working students to manage the time necessary to follow studies while working in their jobs.

Teaching methods involve lectures, practices, seminars, demonstrations, and discussions. Practice work methods include practical and laboratory classes, teamwork, simulation, examples, and cases. Care is taken to consider case studies and works similar to professional activity cases.

The study plan is focused on practical knowledge, so the participation in seminars, practical classes, and training practice is mandatory. However, participation in theoretical lectures is not mandatory. Therefore, the attendance of lectures is low. Students don't put much emphasis on theoretical lectures. Some classes can take place online. Individual consultations are possible to address the student's needs.

Moodle and MS Teams are the major information management systems used to share and submit information from both teachers and students.

The assessment of learning outcomes is regulated. Assessment is based on a 0 to 10 grade points. All information about a subject is provided to the students in the introductory lecture. Students get feedback from their practical works during their implementation and after the submission of the work.

Most practical works require access to the laboratories. The access to the laboratories is controlled by the responsible of the laboratory and it is not accessible freely.

Graduate students may continue their studies in Lithuanian and foreign HEIs, but only a few students continue their studies. To achieve this, extra studies are needed to achieve the necessary background to initiate their studies in a University.

Students face difficulties in the first year performing basic subjects, such as mathematics and physics. Teachers try to motivate students in these subjects by adopting real cases from the study field and applying concepts to solve real problems.

Internships are used to apply the knowledge and competencies achieved by the students.

4.1.2. Access to higher education for socially vulnerable groups and students with individual needs is ensured.

Although no students with special needs were enrolled during the evaluation period, the College has adapted its environment: wheelchair-accessible entrances and lifts, reserved parking, and specialized equipment in the Library and Self-Study Centre, such as adjustable desks, alternative input devices, magnification tools, and software like JAWS for Windows and Dolphin EasyConverter. The study process can be individualized by increasing font sizes, speaking pace, or exam time when needed, while maintaining the same academic assessment standards for all students. Students receive consultation on access and individual study options via the Faculty administration, Study Programme Committee, and online platforms (website, Moodle, MS Teams). Integration into the academic community is supported through professional practices with social partners and formalized by trilateral agreements. A hybrid library system combining physical materials and electronic databases ensures access to academic resources.

ANALYSIS AND CONCLUSION (regarding 4.1.)

The differences in teaching and learning methods in different study cycle years are important but not explicitly referred to in the SER.

Laboratories should have open or semi-open access, where a technician could control the lab access. This would allow better management and coordination of the students while doing their practices.

Feedback on students' laboratory works should be compulsory. Feedback on their practices is an important step in the learning process and allows continuous improvement of their competencies.

Different learning methodologies should be adopted at different stages of the learning process. Students must be more autonomous as they progress in the programme. Therefore, the teaching methodologies should be progressively more student-centered.

Although no students with special needs were enrolled during the evaluation period, the College ensures an inclusive and accessible learning environment through physical adaptations, specialized equipment, individualized study support, and accessible academic resources.

4.2.	There is an effective and transparent system for student assessment, progress monitoring, and assuring academic integrity

FACTUAL SITUATION

4.2.1. Monitoring of learning progress and feedback to students to promote self-assessment and learning progress planning is systematic

Learning progress in the programme Automotive Electronics is monitored through several parallel and interconnected mechanisms:

- Electronic exam sheets allow efficient tracking of cumulative and final assessments;
- Interim assessment results are reviewed regularly by the Department, Deanery and also presented in the Faculty reports;
- Students receive individual feedback on each subject orally and via e-mails;
- Feedback includes both individual and general group-level summaries, highlighting strengths and areas of improvement.

When academic issues arise, additional consultations are offered, and mechanisms to retake exams, repeat subjects, or postpone semesters are in place.

4.2.2. Graduate employability and career are monitored

Graduate employability and career monitoring at Šiauliai State College in the Automotive Electronics programme demonstrates solid foundations and positive regional relevance, especially considering the strong demand for electronics specialists in the Šiauliai region and the direct collaboration with entities such as the NATO base and Scania dealership. Feedback gathered during the visit confirms that some graduates find relevant employment locally, working in electronics service, diagnostics, and military aviation systems. These examples indicate successful alignment with regional labour market needs.

Data on graduate career paths are collected via national platforms and internal surveys, though currently there is no systematic dissemination of visual summaries or statistical trends to stakeholders. While this limits broader strategic use, the information gathered appears sufficient to maintain a general understanding of outcomes. There is evidence of active employer involvement in final thesis evaluation and internships, and social partners regularly participate in programme field committees and consultation processes. These mechanisms support the feedback loop between employers and the HEI, although documentation of specific programme changes from this feedback remains limited.

Students are aware of employment opportunities and appreciate the practical orientation of the programme, including access to modern equipment like DYNO testing platforms and electric vehicles

used for applied projects. INOSTART initiatives further strengthen the applied R&D dimension, enabling students to participate in project-based learning with tangible outputs. However, further efforts could be made to structure career success communication, such as showcasing alumni stories or sector-specific employment results within the Institution's internal platforms, to motivate current students better and inform curricular updates.

While a more robust and transparent career tracking system and programme adjustment would be desirable, the existing infrastructure, ongoing employer engagement, and positive graduate outcomes justify a solid evaluation. The programme serves regional priorities and demonstrates the capacity to ensure graduate employment, particularly in the applied electronics and transport sectors.

4.2.3. Policies to ensure academic integrity, tolerance, and non-discrimination are implemented

The HEI has established clear policies to ensure academic integrity, tolerance and non-discrimination, based on the SVK Statute, Code of Academic Ethics and the Study Regulations. Academic staff are responsible for explaining ethical principles and procedures to students and providing consultation if necessary. Plagiarism prevention is implemented through the mandatory submission of Final Theses to the eLABa system for similarity checks and the signing of an academic honesty declaration. The HEI emphasizes academic freedom and zero tolerance for discrimination. During the self-evaluation period, no violations of academic ethics were reported.

During the onsite visit, students and academic staff expressed that academic integrity is essential; however, no formal cases or precedents of academic misconduct were reported at the Institution.

4.2.4. Procedures for submitting and processing appeals and complaints are effective

The HEI has established a formal and transparent appeals and complaints procedure governed by Student Appeals regulations (2020). The key elements of the process are as follows:

- Eash student may submit a reasoned appeal against academic or administrative decisions to the Dean who evaluates its validity and initiates the appeals process if warranted (Appeal Board).
- Further, if the student disagrees with the decision of the Appeal Board, the case may be forwarded to the Dispute Resolution Commission.

It has been noted that the students **submitted no appeals or complaints** during the evaluation period. During the onsite interviews, the fact was justified - students are capable of solving problems immediately and directly with any representative of academic staff, without initiating formal procedures.

ANALYSIS AND CONCLUSION (regarding 4.2.)

The monitoring of graduate employability in the Automotive Electronics programme reflects good alignment with regional labour market needs and demonstrates the programme’s relevance, (e.g. through cooperation with NATO base and Scania dealership). While the HEI collects graduate career data through national platforms and internal tools, its use remains internal mainly, with limited public dissemination or integration into strategic development. Nevertheless, regular involvement of employers in internships and thesis evaluations supports effective feedback loops. Student feedback and applied projects, such as those supported by INOSTART, confirm the practical orientation of the programme. The Institution could benefit from more structured communication of graduate success stories and employment statistics to enhance impact. Despite this, the current mechanisms effectively maintain programme relevance.

While monitoring and **feedback mechanisms** are actively used, they are primarily administrative and reactive. There is limited evidence of structured tools or processes for helping students plan their learning progress proactively, such as systematic self-assessment tools or personalized academic advising strategies. The feedback seems to rely on the initiative of teachers rather than being a part of formal, Institution -wide -methodology.

One of the previous Expert comments was to provide measures to increase student’s motivation. While meetings with industry representatives are organized in the first study year, it would

be reasonable to have a plan of regular similar activities, as the students, while getting new knowledge and skills, could analyze the potential workplaces from different perspectives during the whole study process.

The HEI has defined and made publicly available policies and procedures to ensure **academic integrity and a non-discriminative environment**. Preventive (declaration of honesty) and reactive mechanisms (similarity checks) are established and effective, as no recorded violations have been reported.

The well-documented appeal procedure ensures fairness, transparency and protection for the students submitting appeals. The absence of submitted appeals may reflect **a well-functioning academic environment of underutilizing the mechanism**.

AREA 4: CONCLUSIONS

AREA 4	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				x	

COMMENDATIONS

1. The programme effectively ensures graduate employability through strong regional partnerships, with graduates successfully entering relevant positions in the electronics and automotive sectors, including high-demand areas such as the NATO base and regional dealerships.

RECOMMENDATIONS

To address shortcomings

N/A

For further improvement

1. Organizing meetings with industrial representatives at the later study stages would increase motivation and raise interest in the profession even more.
2. An institution-wide formal procedure should be implemented to provide feedback to the students during the semester and after exams.
3. Increase visibility of alumni career paths and integrate their success stories into student orientation and career planning activities to strengthen motivation and programme attractiveness.
4. Assessment methods for students with special needs.
5. Feedback about their practice work should be compulsory in all subjects.
6. Different teaching and learning methods in different years of the study cycle should be considered.
7. Laboratories should be open access or semi-open access.

AREA 5: TEACHING STAFF

5.1.	Teaching staff is adequate to achieve learning outcomes

FACTUAL SITUATION

5.1.1. The number, qualification, and competence (scientific, didactic, professional) of teaching staff is sufficient to achieve learning outcomes

- There are 18 teachers on staff related to the programme, 12 teach study field subjects (3 assoc. prof., 9 lecturers with min. 0.5 FTE workload), and an average of 20 years' experience (in 45-50 years age bracket). As observed under area 2, teachers strive to keep in line with the latest technological innovations and actively participate in publishing and conferences. Teachers are attested periodically, and new teachers are accepted for 5 years in open competition. 67% know English (min. B2 level), 3 know German at B1 level. SVK organizes English language courses for teachers.
- Lecturers related to industry (e.g. Technesa) and industrial guest lecturers deliver lectures, including international experts.
- 94 students (~20 students/teacher, which is manageable with modern digital educational tools).
- Composition and hiring practices meet Lithuanian higher educational standards.
- Plans are in place to include younger teaching staff. Recently, 2 young PhD graduates were hired as teaching staff. Financial incentives are provided.
- 1/3 of the staff also work in industry, >70% are full-time, but many have their own businesses. The number of PhD holders is low (33%, close to the minimum of 10%).
- Publishing activities are low for lecturers, but after reforms min. 1 publication and 1 methodological aid are mandatory for lecturers. The next attestation is in 2026. It is not clear how staff will meet these requirements.
- None of the teaching staff spoke English during the meeting, despite 67% reporting as able to speak at least on a B2 level. Erasmus+ incoming student reports that they can converse in English with lecturers (but he was not from the evaluated study program).

ANALYSIS AND CONCLUSION (regarding 5.1.)

According to SER, educators are well-prepared, and the ratio of students to teachers is appropriate. Teachers are scientifically active, some are industry-related, and aim to integrate the latest innovations into their courses. The age of lecturers is acceptable considering EU retirement age trends, but some consideration should be given to the inclusion of younger staff, esp. returning industrial experts.

The site visit revealed that since the last evaluation period, 2 young PhD holders were added to teaching staff since the last evaluation period, showing an encouraging trend. Some older teaching staff currently have fewer than the required publications for the next attestation. Older staff have difficulties speaking English, despite SER reporting that 67% are capable of speaking English. Most teaching staff either work directly for industry or have their own businesses. The number of PhD holders is above but close to the mandatory national minimum (33%, minimum is 10%), but the trend is positive due to additional young PhD holders.

5.2.	Teaching staff is ensured opportunities to develop competences, and they are periodically evaluated

FACTUAL SITUATION

5.2.1. Opportunities for academic mobility of teaching staff are ensured

- 7 (/12) teachers did a total of 17 Erasmus+ staff mobility visits to 9 CEE regional institutions, networking and exchanging knowledge on best practices.
- 2 foreign teachers visited for teaching and 16 for training, under the Erasmus+ programme.

- Guest lecturer from the University of Bologna (PhD student, related to AI in the automotive sector - self-driving cars, machine vision etc.)
- Staff hopes NEOLAiA network participation will improve mobility.

5.2.2. Opportunities for the development of the teaching staff are ensured

- Teachers participate in internships, professional training courses, seminars, scientific publishing activities (conferences and scientific article publications, see also area 2), and project activities. They improve their professional knowledge by working for regional companies. SVK covers related expenses from the state budget and other revenue sources, and the Erasmus+ program for international visits.
- Teachers are members of national professional societies (e.g. Lithuanian Mathematical Society), and scientific committees to international conferences (e.g. Business,
- New Technologies and Smart Society). One teacher served on the expert group to update engineering study field descriptions with the SKVC.
- English language training is provided to staff.
- Staff receive professional training at their own pace, participate in Erasmus+ exchanges, and complete industry internships. Teaching staff accreditation is based on personal qualification activities.

ANALYSIS AND CONCLUSION (regarding 5.2.)

The number of outgoing staff exchanges is appropriate, but incoming staff exchanges aimed at teaching could be improved. There is hope that NEOLAiA membership will boost the international visibility of HEI. Further improving the English language skills of staff should improve the situation as well.

AREA 5: CONCLUSIONS

AREA 5	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle			x		

COMMENDATIONS

1. Good connections to local industry and regional value chains (see area 2 also).
2. Evidence of successfully including young PhD holders in the teaching staff.

RECOMMENDATIONS

To address shortcomings

1. Some teaching staff have a low number of publications. This needs to be addressed by increasing the number of publications.

For further improvement

1. The number of incoming staff exchanges under the Erasmus+ programme could be improved further, to increase visibility and promote knowledge exchange, esp. in new areas, such as AI applications.
2. As highlighted in the SER, the number of English-speaking teaching staff could be improved further, which also addresses (1.) – English-speaking staff can better support and encourage incoming mobility.

AREA 6: LEARNING FACILITIES AND RESOURCES

6.1.	Facilities, informational and financial resources are sufficient and enable achieving learning outcomes

FACTUAL SITUATION

6.1.1. Facilities, informational and financial resources are adequate and sufficient for an effective learning process

The Automotive Elecronics programme is implemented across three buildings of HEI, with access to 11 specialized laboratories. Laboratories are equipped with modern diagnostic tools, multimeters, oscilloscopes, signal generators and software tools (e.d. AutoCAD, Mutlisim, MPLAB etc.). In 2024, new acquisitions included a Nissan Leaf EV and plans for EV charging and diagnostic tools for electric vehicles, indicating ongoing investment and modernization, following the actual industrial trends.

The on-site visit confirmed the presence of up-to-date laboratory equipment, dedicated student rest areas, and a specialized garage equipped with all necessary tools for implementing the programme and constructing automotive prototypes.

The HEI has made clear efforts to ensure accessibility for **students with disabilities**:

- Buildings are renovated and equipped with wheelchair-accessible entrances and lifts,
- The library and Self-Study Centre (LSSC) includes height-adjustable desks, Braile readers, screen reading software (JAWS) and visual magnifiers.

Students complete **practical training outside HEI** in collaboration with local automotive companies, based on the trilateral agreement between the student, HEI and the company. The partners provide real-world environments for vehicle diagnostics, maintenance and repair, aligning with program learning outcomes.

The **LSSC** supports a hybrid structure, where a robust collection of printed materials is supplemented by electronic materials (27%). Access to the databases EBScO, Taylor&Francis, etc. is ensured by EZproxy access, enabling remote use of the subscribed databases. Annual literature actualization is organized on the basis of academic staff-provided lists.

6.1.2. There is continuous planning for and upgrading of resources.

The HEI demonstrates an ongoing commitment to upgrading the study infrastructure for the Automotive Electronics study program . Each year the Department submits proposals for the resource updates to the Faculty Dean, ensuring finances according to the strategic priorities. Budgeting is governed by the HEI's Financial Management Procedure (2014).

ANALYSIS AND CONCLUSION (regarding 6.1.)

Laboratories and technical resources are modern, expanding and well-suited for theoretical and practical learning outcomes. Facilities are adapted for students with special needs, ensuring inclusivity. The internship network is diverse and offers adequate hands-on experience in the automotive electronics sector. The Library provides modern support and up-to-date resources. However, **the lack of the IEEE Xplore database**- the cornerstone of technical literature in electronics- limits students' and teachers' abilities to engage with the latest international research and innovations.

AREA 6: CONCLUSIONS

AREA 6	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				x	

COMMENDATIONS

1. Continuous investment in modern labs and EV technologies ensures industry-relevant practical training.
2. Strong commitment to accessibility by means of adapted facilities and inclusive learning.

RECOMMENDATIONS

To address shortcomings

N/A.

For further improvement

1. It is suggested that the laboratory equipment be updated and attract industrial sponsors, guaranteeing the long-term sustainability of resource renewal and alignment with current industry standards. Especially, when the procedure of prioritizing the Faculty needs is unclear.

AREA 7: QUALITY ASSURANCE AND PUBLIC INFORMATION

7.1.	The development of the field of study is based on an internal quality assurance system involving all stakeholders and continuous monitoring, transparency and public information

FACTUAL SITUATION

7.1.1. Internal quality assurance system for the programmes is effective

Internal and official documents regulate the study quality management system.

Internal quality assurance of the field of study is promoted and checked hierarchically, including the Dean, who guarantees the material and human resources to achieve the necessary quality level; the Vice-Dean, the Study Area Committee and the Study Programme Committees coordinate the internal quality assurance process. The SER describes the quality assessment process based on the regulations.

After each semester, feedback is collected from students through surveys. The results of the surveys are analysed and integrated in the quality management process to guide the formulation of improvement actions. These are then discussed with students., allowing them to also propose improvement measures. Students may give feedback about the quality of the study field writing to the Head of the Department, the dean or to the Management Representative for Quality.

The metrics used to assess the quality, and the thresholds to determine when problems arise are not explicitly stated.

The internal quality assurance methodology and processes are well defined, some examples on how the collected information has led to modifications are given, but their functionality and effectiveness are not demonstrated.

7.1.2. Involvement of stakeholders (students and others) in internal quality assurance is effective

At Šiauliai State College, the Automotive Electronics programme demonstrates a structured and functional system for involving students and external stakeholders in internal quality assurance processes. Student representatives regularly participate in programme committee meetings and provide feedback through semester-based surveys and monthly meetings with group monitors. Feedback on study organization and course delivery is publicly summarised, and actionable suggestions are addressed promptly.

External stakeholders—particularly employers and social partners—contribute to the quality assurance process through participation in qualification commissions, internships, and discussions on curriculum development. While the Self-Evaluation Report (SER) lacks detailed evidence of curriculum changes directly resulting from employer input, feedback gathered during site visits confirms that topics like artificial intelligence in vehicles and electric vehicle diagnostics have been integrated following expert suggestions.

The INOSTART initiative, which enables students to contribute to applied research projects culminating in real-world products, reflects the programme's commitment to hands-on learning and stakeholder collaboration. The annual inter-institutional conference involving students, teachers, and partners further fosters dialogue and curriculum relevance.

Although the overall system appears active and functional, there is still room for improving the formal documentation of how feedback is systematically collected, analyzed, and integrated into programme development. The impact of stakeholder feedback could be communicated more transparently, particularly in terms of tracking how suggestions translate into measurable changes in curriculum or infrastructure.

7.1.3. Information on the programmes, their external evaluation, improvement processes, and outcomes is collected, used and made publicly available

The HEI has established processes for collecting, using and disseminating information about the study programme. The following data types are collected and further published:

- **Programme descriptions**, including learning outcomes, qualification awarded, curriculum structure, and admission requirements, are available on the website.
- **Study quality indicators**, such as results of student surveys, performance statistics etc.
- **Evaluation results**, such as internal self-evaluation reports, are shared internally and selectively made public.

There are also clear examples of how the collected data has led to improvements in the program structure (e.g. the organization of practices has changed in response to the social partner's remarks).

7.1.4. Student feedback is collected and analysed

The HEI systematically collects student feedback on the Automotive Electronics study programme through regular internal surveys conducted at the end of each semester. The surveys focus on the study subjects' quality, teaching methods, performance, and organization. In the academic year 2023-2024, SER reports that only 20% of students participated in the internal surveys. Results are discussed in the Department and Programme Committee meetings. Students also receive feedback on actions taken in response to their comments through the *Student Proposals* section of the website.

Students often raise questions regarding the necessity of the general courses, and staff respond with explanations of their relevance for developing soft skills and professional adaptability.

ANALYSIS AND CONCLUSION (regarding 7.1.)

The HEI has several mechanisms to assess the quality of the Programme involving all the institution's stakeholders. The functionality and effectiveness of the quality management process are not demonstrated, except for some particular cases. More than formal, the quality assurance plan should be functional. The plan should include clear metrics and thresholds determining when some aspect needs restructuring. Also, it should include indicators about the effectiveness of the restructuring measures and the time expected for a measure to take effect. The national and international academic exchange must also be checked for quality.

The HEI has internal mechanisms for collecting and analyzing student feedback and takes visible steps to act upon it, informing students and broader society. However, student participation remains low (20%), which limits representativeness. None of the national student survey tools are used; thus, the feedback system lacks external comparability at the national level.

AREA 7: CONCLUSIONS

AREA 7	Unsatisfactory - 1 Does not meet the requirements	Satisfactory - 2 Meets the requirements, but there are substantial shortcomings to be eliminated	Good - 3 Meets the requirements, but there are shortcomings to be eliminated	Very good - 4 Very well nationally and internationally without any shortcomings	Exceptional - 5 Exceptionally well nationally and internationally without any shortcomings
First cycle				x	

COMMENDATIONS

1. The INOSTART initiative successfully involves students in applied research projects that result in tangible products, fostering practical skills and real-world problem-solving.
2. Public access to key programme information and feedback results demonstrates transparency and a commitment to continuous improvement.

RECOMMENDATIONS

To address shortcomings

For further improvement

1. Distinguish between short-term changes and long-term changes for quality management.
2. Include indicators about the effectiveness of the restructuring measures and the time expected for a measure to take effect.
3. Check the quality of academic exchange programs.
4. Develop mechanisms to increase student engagement in internal feedback.
5. Consider integrating methodologies and national feedback tools similar to the National Student Survey, which would enhance the comparability and credibility of results.
6. Ensure that feedback from social partners and students is systematically documented and clearly linked to specific curriculum or programme changes.
7. Highlight alumni success stories and employment pathways within the programme to inspire students and strengthen the connection between studies and career outcomes.

V. SUMMARY

The expert panel commends Šiauliai State College (ŠVK) for its strategic and clearly defined role as a provider of professional higher education in the region. The Automotive Electronics study programme, which represents the Electronics Engineering study field at the College, demonstrates a strong orientation toward practical training and labour market needs, particularly within the context of the Šiauliai region's economic environment. The programme's niche alignment with the automotive and electronics sectors, including defence-related industries, supports regional development and offers students relevant employment opportunities.

Key strengths identified by the review panel

- **Labour market relevance.** The Automotive Electronics programme aligns well with regional industry needs, particularly in the automotive service and electronics sectors. Cooperation with local companies ensures that students gain practical experience through internships, final theses, and applied research projects.
- **Practical orientation of the curriculum.** The structure of the study programme demonstrates a clear and logical progression from foundational knowledge to advanced applied skills. Final theses reflect real-world challenges, and the INOSTART initiative offers valuable opportunities for students to engage in practical innovation.
- **Modern and inclusive infrastructure**. The programme benefits from up-to-date facilities, including specialized laboratories, EV equipment, and a prototyping garage. The College has also invested in accessibility measures for students with special needs.
- **Stakeholder involvement.** Students and social partners are actively involved in quality assurance through participation in committees, feedback processes, and supervision of final projects.
- **Supportive learning environment.** The hybrid library system, digital platforms (Moodle, MS Teams), and the open communication culture contribute to a student-centred approach. The complaints procedures are clear, and students feel confident resolving issues directly with staff.

Areas for improvement and further development

- **Incomplete curriculum mapping**. The SER lacks a detailed matrix showing the alignment between programme learning outcomes, subject-level outcomes, teaching methods, and assessment strategies. This limits transparency and coherence in curriculum implementation.
- **Limited development of transversal skills.** The curriculum does not systematically include competencies such as entrepreneurship, project management, or innovation-related soft skills, which are important for adaptability in broader professional contexts.
- **Weak integration of quality metrics**. The internal quality assurance system lacks defined performance indicators, thresholds for action, and structured monitoring of the effectiveness of improvement measures.
- **Low student participation in feedback.** Only 20% of students participated in internal surveys in the 2023–2024 academic year. The absence of participation in national student surveys reduces comparability with other institutions.
- **Limited access to scientific databases.** While digital resources are available, the lack of key technical databases such as IEEE Xplore restricts access to the latest international research in electronics, affecting student and staff engagement in academic development.

- **Low mobility engagement.** Student and staff participation in academic exchange remains limited, and further development of foreign language skills—especially among teaching staff—would support broader internationalization goals.

Aknowledgement

The panel would like to commend HEI for its professional and well-organized self-evaluation process, the documentation quality, and the openness and engagement demonstrated during the site visit. The institution's strong commitment to quality improvement and industry relevance was evident throughout the evaluation.

VI. EXAMPLES OF EXCELLENCE

Examples of excellence should include examples exhibiting exceptional characteristics that are, implicitly, not achievable by all.

N/A