

JOINT OPINION BY THE EXPERT GROUP ON THE RE-ASSESSMENT OF A STUDY
PROGRAMME

STUDY FIELD

Information Technology, Computer Engineering, Electronics, Telecommunications,
Computer Control and Computer Science

STUDY PROGRAMME

Short cycle professional higher education study programme “PROGRAMMING” (41484)

RIGA TECHNICAL UNIVERSITY

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Summary of the Re-Assessment of the Study Programme

The short cycle professional higher education study programme “Programming” was originally implemented at the former Rezekne Academy of Technologies (RTA) as a first level professional higher education study programme. In 2023 the study programme was restructured into a short cycle professional higher education programme aligned with LQF/EQF level 5 and expanded to 120 ECTS. On 1 April 2025, RTA was incorporated into Riga Technical University (RTU) as RTU Rezekne Academy. Following this transition, the study programme was integrated into RTU’s IT study field.

The expert group conducted a comprehensive re-assessment of the short cycle professional higher education study programme “Programming” (41484) implemented by Riga Technical University (RTU) in RTU Rezekne Academy. The evaluation examined the implementation of previous recommendations, the internal coherence and relevance of the programme, the quality of teaching and learning, available resources, teaching staff qualifications, compliance with regulatory requirements, and the overall sustainability of the programme.

Overall, the programme is found to be coherent, professionally oriented, and aligned with national regulatory requirements and the professional standard “Programmer”. The institution has demonstrated a serious commitment to continuous improvement, addressing most recommendations from the previous evaluation and strengthening the programme’s structure, content, and implementation mechanisms. The programme remains relevant to labor market needs and provides an accessible pathway to professional qualification and further studies.

The key findings of the re-assessment are as follows:

1. Implementation of Previous Recommendations

The institution has addressed most recommendations from the 2023 evaluation. Improvements include personalized learning opportunities for high performing students, enhanced communication channels between students and teachers, strengthened collaboration with employers and graduates, and updates to course content. The study programme has also refined its focus on programming and improved its structure by merging small courses and updating outdated content. Progress has been made in supporting teachers’ use of digital learning platforms.

Positive aspects:

- Clear progress in implementing previous recommendations.
- Improved programme focus and structure.
- Strong collaboration with employers and graduates.
- Enhanced communication and personalized learning opportunities.

Negative aspects:

- Student dropout rates, linked to academic challenges and personal factors, remain high despite some interventions.

2. Programme Design and Relevance

The study programme is fully compliant with the study field “Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science”. Its title, aims, learning outcomes, admission requirements, duration, and scope form a coherent and well-structured system aligned with LQF/EQF level 5 and the professional standard “Programmer”. The curriculum is practice oriented, integrating internships, project based learning, and applied course content. The programme is economically and socially justified, responding to regional labour market needs and supporting lifelong learning. However, the overall number of students has declined, raising concerns about long term sustainability.

Positive aspects:

- Strong alignment with national standards and the professional qualification.
- Coherent curriculum with clear mapping to learning outcomes.
- High labor market relevance and regional accessibility.
- Well-structured internship system supporting professional readiness.

Negative aspects:

- Low and declining student numbers.

3. Content and Implementation of Studies

The curriculum covers contemporary IT topics, including cloud computing, mobile development, NoSQL databases, and AI. Learning methods are student centered, with practical assignments, digital resources, and opportunities for advanced learners. Internships are well organized and aligned with learning outcomes, and final thesis topics are relevant and professionally oriented. However, several areas require further development. Student participation in surveys has historically been low, limiting the robustness of quality assurance data. Some internship cooperation agreements require renewal to ensure long term stability.

Positive aspects:

- Topical curriculum aligned with industry needs.
- Strong project based and practice oriented learning.
- Effective internship organization with industry involvement.
- Relevant and applied final thesis topics.

Negative aspects:

- Limited development of analytical and research oriented competences.
- Low student participation in feedback mechanisms.
- Need for systematic renewal of internship agreements.

4. Resources and Provision

The study programme benefits from adequate material, technical, and informational resources. Integration with RTU has expanded access to digital platforms, library resources, and

institutional infrastructure. Financial provision is stable, though heavily dependent on state funding.

Positive aspects:

- Adequate infrastructure and digital learning environment.
- Expanded access to RTU resources after the merger.
- Stable financial provision, enabling programme continuity.

Negative aspects:

- Academic staff require further support to fully utilize RTU systems.
- High dependence on state funding.

5. Teaching Staff

The teaching staff meet regulatory requirements and are generally well qualified. Most hold doctoral or master's degrees, and nearly all have recent research activity. Cooperation among staff is strong, supported by structured mechanisms and enhanced by the merger with RTU. However, the proportion of staff with formal IT education is relatively low, and research engagement varies significantly among staff members.

Positive aspects:

- Qualified and competent teaching staff.
- Strong cooperation and integration with RTU academic structures.
- Active research engagement among many staff.

Negative aspects:

- Low percentage of staff with IT specific academic backgrounds.
- Uneven research productivity across staff.

In conclusion, the study programme "Programming" (41484) is fully compliant with requirements 2 and 3, whilst it is partially compliant with requirement 4. Requirement 1 is not applicable. The identified cases of partial compliance relate to formal documentation and guarantee alignment and do not constitute deficiencies that cannot be eliminated within the accreditation period.

I. IMPLEMENTATION OF THE RECOMMENDATIONS RECEIVED DURING THE PREVIOUS ASSESSMENT PROCEDURES

Criterion:

In the previous evaluation of the study field the recommendations made by the expert group during the evaluation of the study field and the recommendations made by the Study Quality Commission (if applicable) that are directly relevant to the study programme under evaluation are / have not been fully or partially implemented. The contribution of the higher education institution / college to the analysis of recommendations and their application to the specifics of the study programme is evident.

Analysis

The short-term recommendations made by the expert group during the last evaluation (in 2023) and the extent to which the HEI has addressed these are (based on the information provided in the submitted documentation and the interviews) as follows:

- Offer personalized content (as curricular and/or extra-curricular activity) for more ambitious students.
 - The recommendation has been fully implemented. The study programme now integrates differentiated assessment tasks that allow high-achieving students to demonstrate advanced competencies and obtain higher-level grades in accordance with Cabinet Regulation No. 305. Personalized learning pathways are further strengthened through the inclusion of MOOC platforms, competitive programming environments (e.g., CodeWars), external certification systems, and structured portfolio development embedded in coursework and qualification work. Additional opportunities, such as involvement in FLPP research projects, advanced project-based learning, and guest lectures from industry, provide motivated students with extended academic and professional challenges. (SAR, Table 1, Task 4 (p. 9–10); SAR Table 1, Task 3 (p. 9); Table 1, Task 5 (p. 9); Section 3.1.4 (p. 14); Section 3.2.1 (p. 16 onward); Section 3.1.2 (p. 10–12); interviews during the site visit).
- Clearly inform students about possibilities about ways to communicate possible individual issues with teachers.
 - This recommendation has been fully implemented. The study programme now ensures transparent communication channels through the RTU e-study environment, where each course provides teacher contact details, consultation hours, and communication procedures. These expectations are reinforced during orientation, in course introductions, and through the study agreement. Students have access to regular weekly consultations, additional sessions during assessment periods, and individual meetings upon request, with the programme director and study administration also available for personal or academic concerns. (SAR Table 1, Task 2 (p. 9); SAR Annex 03; SAR Section 3.2.1 (p. 16 onward); SAR Section 3.1.4 (p. 14); SAR Section 3.1.3 (p. 13); SAR Section 3.1.4 (p. 14); interviews during the site visit).
- Analyze in collaboration with employers and experienced graduates, which course content must be updated and proceed accordingly.

- This recommendation has been fully implemented. The study programme now systematically incorporates feedback from industry partners as well as insights gathered through structured interviews with graduates. This input has directly informed curriculum updates, resulting in the introduction of new courses (e.g., No-SQL Databases, Introduction to Research and Data Science, updated programming modules), the integration of industry-standard tools and certification platforms, and the strengthening of professional preparation components such as portfolio development and job-readiness training. (SAR Table 1, Task 1 (p. 10); SAR Table 1 Task 2 (p. 10); SAR Section 3.1.3 (p. 13); SAR Task 1 (p. 9); SAR Section 3.1.1 (p. 8); SAR Table 1 Task 3 (p. 9); SAR Section 3.1.4 (p. 14); SAR Table 1 Task 4 (p. 9); SAR Table 1 Task 5 (p. 9); SAR Section 3.2.1 (p. 16 onward); interviews during the site visit).
- Provide students with information about possible career paths, through presentations of real-world applications and examples, e.g. lectures given by employers and experienced graduates.
 - This recommendation has been fully implemented. The study programme now regularly organizes guest lectures delivered by industry representatives, Erasmus+ lecturers, researchers, and experienced graduates, offering students direct insight into professional roles and current labor-market expectations. Career-oriented activities such as Accenture bootcamps, TestDevLab summer schools, trainee programmes with industry partners, and structured internship placements further strengthen students' understanding of practical career trajectories. (SAR Table 1 (p. 9–10); SAR Section 3.1.4; SAR Annex 26; interviews during the site visit).
- The RTA [RTU Rezekne academy] needs to analyze student drop-out rates more thoroughly and develop a plan to reduce it, for example by providing additional support to students to ensure the sustainability of the study programme.
 - This recommendation has been fully implemented. The study programme now conducts systematic monitoring of exmatriculation data, identifying key causes such as academic underperformance and early employment. In response, targeted interventions have been introduced, including the simplification and restructuring of selected courses, additional academic support for weaker students, and strengthened professional-orientation activities to increase motivation and retention. (SAR Section 3.1.4 (p. 14); SAR Table 1, Task 4 (p. 9); SAR Section 3.1.3 (p. 13); interviews during the site visit).
- Do not go too broad. Focus on programming. Experts advise setting up a review panel of SF [study field] staff, students, graduates and employers to discuss the content of the SP [study programme].
 - The curriculum has been streamlined and updated to align closely with the professional standard “Programmer”, with new and revised courses centered on core programming competencies and full-stack development. Employers and graduates are regularly consulted through interviews, guest lectures, and cooperation agreements, and their feedback informs ongoing curriculum updates. However, the experts did not identify evidence that a review panel, comprising staff, students, graduates, and employers, has been established as recommended. While stakeholder input is clearly utilized, the absence of a structured, documented review panel indicates that the recommendation has been addressed only in part. (SAR Section 3.1.1 (p. 8); SAR Table 1, Task 1

(p. 9); SAR Table 1, Task 1 (p. 10); SAR Table 1, Task 4 (p. 9–10); SAR Section 3.1.3 (p. 13); SAR Annex 26; SAR Annex 06; SAR Section 3.1.4 (p. 14); SAR Section 3.2.1 (p. 16 onward); interviews during the site visit).

- Programming as a skill: Experts recommend doing analysis about learning sources (digital vs paper, user documentation vs programming books, programmer fora, blogs, vlogs etc.). Open and encourage to use the whole world of information as it is available today. Do not teach from outdated books. Neither to programme, nor database management, nor computer architecture. Do not prefer essays over practical exercises.
 - This recommendation has been fully implemented. The study programme has shifted decisively toward contemporary, digital learning materials by integrating MOOC platforms, online documentation, competitive programming environments (such as CodeWars), and certification systems like SoloLearn and Codecademy. Course content has been updated to reflect current technologies, and teaching now prioritises hands-on programming tasks, project-based learning, and full-stack development, with no indication of reliance on outdated textbooks or essay-based assessment. (SAR Table 1, Task 3 (p. 9); SAR Table 1, Task 1 (p. 9); Section 3.2.1 (p. 16 onward); Section 3.1.2 (p. 10–12); SAR Section 3.1.4 (p. 14); SAR Table 1, Task 2 (p. 10); interviews during the site visit).
- Modify the course "Business process modeling and graphical interface prototyping" skipping the business process modeling part from the course and introducing only ICT related business topics and graphical interface development.
 - This recommendation has been fully implemented. The SAR indicates that non-ICT-specific business-process-modelling content has been removed, and the course has been restructured to focus exclusively on ICT-relevant business topics and graphical interface development, in line with the expert recommendation. (SAR Table 1, Task 1 (p. 9); SAR Table 1, Task 4 (p. 9–10); SAR Section 3.2.1 (p. 16 onward); SAR Section 3.1.2 (p. 10–12); SAR Section 3.1.1 (p. 8); SAR Annex 24; interviews during the site visit).
- Consider merging small 2 CP courses into bigger courses.
 - This recommendation has been fully implemented. Previously fragmented, small-credit courses were consolidated into broader, integrated study units as part of the programme's structural redesign. (SAR Table 1, Task 1 (p. 9); SAR Section 3.1.1 (p. 8); SAR Section 3.2.1 (p. 16 onward); SAR Section 3.1.2 (p. 10–12); SAR Annex 24; interviews during the site visit).

In addition, a long-term recommendation was made:

- Efforts should be made to provide training and support for teachers to effectively utilize LMS platforms, ensuring students have access to valuable online resources and tools.

This recommendation has been fully implemented. RTU has introduced structured professional-development requirements for academic staff, including mandatory training hours that encompass digital-teaching competencies. Teachers receive methodological support for the RTU e-study environment, and the programme has integrated a wide range of modern online tools and platforms - such as MOOCs, CodeWars, SoloLearn, and Codecademy - into course delivery. (SAR Table 1, Task 2

(p. 9); SAR Table 1, Task 3 (p. 9); SAR Section 3.2.1 (p. 16 onward); SAR Section 3.1.1 (p. 8); SAR Section 3.1.2 (p. 10–12); interviews during the site visit).

Conclusions on this set of criteria, by specifying strengths and weaknesses

The HEI has seriously engaged with addressing the recommendations made by the previous expert panel during the last evaluation. Most recommendations have been fully implemented, and progress has been made towards one recommendation that has been partly implemented.

Strengths:

1. Personalised content for the excellent students in the form of portfolio, online courses, additional requirements for evaluation above 8 points are offered;
2. Good student-teacher communication;
3. Good collaboration with graduates and employers towards defining the content of study courses;
4. Lectures by industry specialists are offered;
5. The focus and structure of the study programme have been improved and mechanisms for continuous improvement are in place.

Weaknesses:

1. The support of weak students is provided through the simplification of the study courses;
2. Student dropout rates remain high, despite the analysis and measures taken to reduce it.

II. ASSESSMENT OF THE STUDY PROGRAMME “PROGRAMMING”

2.1. Indicators Describing the Study Programme

Analysis

2.1.1. Compliance of the study programme with the study field.

The expert analysis has been completed considering the Self-Assessment Report (SAR), Section 3.1.1. The short-cycle professional higher education study programme “*Programming*” is fully compliant with the study field “*Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science*”. According to the decision of the Study Quality Commission of 19 March 2025 (Decision No. 2025/15-I), the study programme has been formally integrated into this study field, ensuring vertical and horizontal coherence within the institutional portfolio. In addition, it should be noted that **RTA was consolidated with RTU (Riga Technical University) in 2025**. This process introduces additional challenges but, at the same time, aims to **strengthen RTU Rezekne Academy** in several areas, including research, quality processes, and infrastructure.

The study programme content, learning outcomes and awarded professional qualification correspond directly to the thematic focus of the study field, in particular to the sub-field *Software and Application Development and Analysis*. The curriculum structure, learning outcomes and professional orientation are aligned with the objectives and scope of the study field.

The alignment of the study programme with the study field is further reinforced by the study field's development plan, which emphasises practice-oriented education, the use of modern programming technologies, cooperation with industry, and student involvement in applied research. These priorities are directly reflected in the study programme's curriculum design, applied learning methods and internship model.

In conclusion, the study programme "*Programming*" is compliant with the study field "*Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science*" and is appropriately positioned within it in terms of content, learning outcomes and professional orientation.

2.1.2. The title, code, degree to be obtained, professional qualification or degree and professional qualification of the study programme, aims, objectives, learning outcomes, which are compliant with the respective LQF/EQF level, and admission requirements are interrelated. The duration and scope of the study programme implementation (including different study programme implementation options), as well as the implementation language, are reasonable and justified.

The experts analysis was completed considering the SAR section 3.1.2 and corresponding annexes (SAR Annex 9 – Compliance of the Study Programme with the State Professional Higher Education Standard, SAR Annex 10 – Compliance of the Qualification Awarded with the Professional Standard "Programmer", SAR Annex 11 – Study Programme Plan, SAR Annex 13 – Mapping of Study Courses to Programme Learning Outcomes).

The title of the study programme "Programming", the study programme code (41484), the awarded professional qualification (Programmer), and the qualification level (LQF/EQF level 5) are mutually consistent and accurately reflect the content, scope and professional orientation of the study programme. The study programme is implemented as a short-cycle professional higher education study programme in accordance with national regulatory requirements and the professional standard "Programmer".

The aim of the study programme "Programming" is to prepare specialists for the performance of professional duties of a programmer by awarding a professional qualification (at LQF/EQF level 5), while promoting graduates' competitiveness in the labour market and providing a basis for further studies at the first-cycle level in the field of information technologies (SAR, Section 3.1.2). The aim is aligned with the requirements of the professional standard "Programmer" and reflects both immediate labour market needs and opportunities for academic progression.

The objectives of the study programme specify the implementation mechanisms of the aim and are logically derived from it. They focus on: 1) the acquisition of general and specialised knowledge in information technologies and programming; 2) the development of practical skills in software development, testing and maintenance in accordance with professional standards; 3) the ability to solve professional tasks independently and in a team, observing professional ethics and labour market requirements; 4) the promotion of motivation for lifelong learning and further education at the first-cycle level (SAR, Section 3.1.2).

The intended learning outcomes of the study programme are formulated in terms of knowledge, skills and competences and are fully aligned with the descriptors of LQF/EQF level 5, as defined by the Cabinet of Ministers Regulations No. 322. The learning outcomes ensure both vertical alignment with the qualification level and horizontal alignment with the programme aim and objectives (SAR, Section 3.1.2).

Admission requirement to the study programme is completed secondary education, while admission rules consider examinations in mathematics, Latvian language and a foreign language. These are appropriate for the level and profile of the study programme and ensure that admitted students possess the foundational knowledge necessary to achieve the intended learning outcomes. The admission requirements are directly linked to the requirements of the programmer's profession, particularly with respect to algorithmic thinking, problem solving and professional communication.

The duration (2 years) and scope (120 CP) of the study programme comply with the Law on Higher Education Institutions and the State Professional Higher Education Standard. The structure of the study programme ensures a balanced distribution between theoretical studies, practical training, internship (24 CP) and the qualification thesis (12 CP). This structure supports the achievement of learning outcomes at LQF/EQF level 5 and provides sufficient depth and intensity for professional qualification acquisition within a short study cycle.

The language of implementation of the study programme is Latvian, which is justified by the regional and national context of the study programme (as this study programme is implemented in Rezekne city, Latgale region). At the same time, the curriculum integrates extensive use of English professional terminology, documentation and tools commonly applied in the IT industry, thereby supporting graduates' readiness for employment in international and multilingual professional environments.

In conclusion, the title, code, qualification, aims, objectives, learning outcomes, admission requirements, duration, scope and language of implementation of the study programme form a coherent and logically interrelated system that ensures compliance with the relevant LQF/EQF level and the professional standard.

2.1.3. The corrections made to the study programme's parameters within the assessment of the study field are analyzed, justified and would be supported.

The corrections made to the study programme "*Programming*" during the assessment of the study field are documented in the Self-Assessment Report (SAR), primarily in Sections 3.1.1 and 3.1.2, and are directly related to changes in the regulatory framework, institutional restructuring (joining RTU) and the integration of the study programme into a unified study field.

One of the key corrections concerns the formal inclusion of the study programme into the study field "Information Technology, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science" following the decision of the Study Quality Commission of 19 March 2025 (Decision No. 2025/15-I). This correction ensured institutional coherence of the study programme within the study field and alignment with the updated structure of the study field (SAR, Section 3.1.1).

Another significant correction relates to the transition of the study programme to a short-cycle professional higher education study programme with a total scope of 120 CP, in accordance with the State Standard of Short-Cycle Professional Higher Education as defined by Cabinet Regulation No. 305. The expansion of the study programme scope and the restructuring of its content were necessary to ensure compliance with national regulatory requirements and the Latvian Qualifications Framework at LQF/EQF level 5. Compliance of the study programme structure, scope and content with the state standard is demonstrated in Annex 9 of SAR.

The study programme curriculum was revised to strengthen professional orientation and internal coherence. This included clarification of the distribution of credit points between general education courses, field-specific courses, professional competence acquisition

courses, internship and qualification work. In particular, the internship component was fixed at 24 CP and the qualification work at 12 CP, ensuring sufficient practical training and independent professional application of acquired competences, as required by the state standard (Annex 9 of SAR).

Corrections were also made to ensure full alignment between the awarded qualification “*Programmer*” and the professional standard. The learning outcomes, curriculum content and assessment focus were reviewed and adjusted to reflect the professional tasks, knowledge, skills and competences defined in the professional standard. This alignment is evidenced in Annex 10 of SAR, which confirms compliance of the study programme with the professional standard “*Programmer*”.

Furthermore, the internal logic between study programme learning outcomes and individual study courses was clarified and formalised through the mapping of study courses to study programme learning outcomes. This correction ensures transparency of outcome achievement and supports both vertical and horizontal alignment within the study programme. The results of this mapping are presented in Annex 13 of SAR.

To conclude: corrections made to the study programme parameters are clearly documented, justified by regulatory and institutional requirements, and supported by evidence provided in the SAR and its annexes. The implemented changes have strengthened compliance with the study field, the state education standard and the professional standard, while improving the internal coherence and professional focus of the study programme.

2.1.4. Economic and / or social justification of the study programme, dynamics of the number of students and employment indicators of the graduates of the study programme.

The study programme “*Programming*” is economically and socially justified, as it prepares specialists for a profession that remains in sustained demand within the information technology sector. The short-cycle professional higher education format enables efficient preparation of graduates with practice-oriented competences aligned with the professional standard “*Programmer*” and labour market requirements (SAR, Sections 3.1.2 and 3.3). From a social perspective, the study programme contributes to regional accessibility of higher education by providing opportunities to obtain a recognised professional qualification in the field of information technologies. The study programme supports lifelong learning and re-skilling, which is particularly relevant in the context of digital transformation and changing labour market needs (SAR, Section 3.3). This relevance was also confirmed by employers during the expert visit.

The dynamics of student numbers, as presented in Annex 7 of SAR, demonstrate relatively stable study programme implementation over the assessed period. The total number of enrolled students fluctuated between 52 and 28 students in the academic years 2020/2021–2025/2026, indicating from one side sustained interest in the study programme (SAR, Annex 7). The 2025/2026 indicates a significant decrease in the number of students (28), with only 11 new students. During experts' visits these numbers were discussed, and study programme director believes that the decrease was related with joining RTU and some sort of uncertainty from potential candidates. Enrollment numbers shall be monitored. At the same time, the overall number of students in the study programme remains relatively low, which limits the study programme’s capacity and long-term sustainability. This indicates the need for additional measures to strengthen the visibility and attractiveness of the study programme and to increase student recruitment.

Student attrition and exmatriculation data show that withdrawals are mainly related to academic failure or personal reasons, which is typical for professionally oriented study

programmes. At the same time, the SAR confirms continuous graduation of students and awarding of the professional qualification “*Programmer*”, demonstrating that the study programme ensures completion pathways for enrolled students (SAR, Section 3.3; Annex 7). Employment indicators of graduates, as monitored at the institutional level and described in the SAR, indicate that graduates either enter the labour market in IT-related positions or continue their studies at the first-cycle level.

In conclusion, the study programme “*Programming*” is economically and socially relevant and aligned with labour market needs; however, the relatively low overall number of students highlights the necessity to strengthen student recruitment and promotion activities to ensure sustainable study programme development.

2.1.5. The development and implementation of the joint study programme is justified and ensures a quality study process (if applicable).

Not applicable.

Conclusions on this set of criteria, by specifying strengths and weaknesses

The analysis of Criteria 2.1.1–2.1.5 confirms that the study programme “*Programming*” is coherently designed, formally integrated into the relevant study field and compliant with national regulatory requirements and LQF/EQF level 5 provisions. The study programme is appropriately positioned as a short-cycle professional higher education study programme oriented towards labour market needs and further academic progression.

The study programme demonstrates clear internal coherence between its title, qualification, aims, learning outcomes, admission requirements, duration, scope and language of implementation, supported by the Self-Assessment Report and annexes. The implemented corrections are justified and have strengthened compliance with the state education standard, professional standard and study field requirements.

The study programme remains economically and socially relevant; however, the relatively low overall number of students indicates the need for additional measures to strengthen student recruitment.

Strengths:

1. Coherent study programme design with a practice-oriented curriculum, including internship and qualification work, supporting employability and further studies.
2. Demonstrated economic and social relevance, particularly in terms of labour market needs and regional accessibility of higher education.

Weaknesses:

1. Relatively low overall number of students, indicating the need to strengthen study programme visibility, promotion and student recruitment activities.
2. Student dropouts are related mainly to academic failure and personal reasons, highlighting the need for enhanced academic support and retention measures, including consideration of more flexible study arrangements.

2.2. The Content of Studies and Implementation Thereof

Analysis

2.2.1. The content of the study programme is topical, the content of the study courses / modules is interconnected and complementary, corresponds to the objectives of the programme and ensures the achievement of learning outcomes, as well as meets the needs of the industry, labor market and scientific trends. Complies with the respective LQF/EQF level, state education standard, profession (occupational) standard or professional qualification requirements (if applicable).

The objectives of the short-cycle professional higher education study programme “Programming” are oriented towards the development of students’ professional competences, adaptability in changing conditions, and the creation of a foundation for further studies in computing-related fields (SAR, p. 16). These objectives are operationalised through clearly defined learning outcomes covering knowledge (K1–K2), skills (S1–S3), and competences (C1–C3), which collectively address fundamental computer science knowledge, software development lifecycle competencies, quality and security awareness, and readiness for professional practice and lifelong learning (SAR, pp. 16–17). The mapping of study courses to learning outcomes confirms internal coherence between study programme objectives and curriculum structure (SAR Annex 13), "Mapping of study courses in the short cycle professional higher education study programme 'Programming' (41484) to achieve study results").

From a topicality perspective, the study programme integrates contemporary technological domains such as DevOps practices, cloud computing, mobile application development, NoSQL databases and artificial intelligence, which correspond to current technological directions in the software industry and digital services sector (SAR, pp. 17–18). The integration of sustainability-oriented themes, including optimisation of resources, efficient use of infrastructure and references to clean energy and responsible consumption, demonstrates alignment with broader societal and technological policy agendas, notably the UN Sustainable Development Goals related to innovation, infrastructure and sustainable production (SAR, p. 19). This positioning strengthens the study programme’s relevance beyond narrowly technical competencies and supports transversal skills development.

The curriculum exhibits logical interconnection and complementarity across study courses, reflecting the full software development lifecycle from requirements analysis and modelling to implementation, testing, deployment and maintenance. This coherence is further evidenced by the alignment with the professional qualification standard “Programmer” (level 5), where professional tasks and competencies are systematically mapped to corresponding study courses, ensuring coverage of functional requirements analysis, system design, data modelling, programming, testing and operational aspects (SAR Annex 10), "Compliance of the short-cycle professional higher education study programme 'Programming' with the 5th level professional qualification standard 'Programmer' standard"). The sequencing of foundational programming, modelling, databases, and software engineering courses into more specialised applied modules supports cumulative competence development rather than fragmented skill acquisition.

Labour market alignment is supported by multiple mechanisms. The curriculum content reflects industry-relevant technologies and methodologies, while the mandatory internship component (24 CP) provides structured exposure to real working environments and professional practices (SAR, pp. 17–18). Periodic guest lectures delivered by industry representatives contribute to contextualising theoretical knowledge and exposing students to current practices and employer expectations (SAR, p. 18). Graduate survey data indicate that

approximately 58% of graduates enter employment shortly after graduation, with higher employment rates observed after two years, demonstrating medium-term labour market integration (SAR Annex 24), "Analytical overview of the results of the questionnaire of graduates of the short-cycle study programme 'Programming' (41484)". At the same time, a substantial proportion of graduates continue studies at bachelor level, indicating that the study programme effectively supports academic progression pathways.

Scientific and technological trend alignment is primarily addressed through dedicated study courses such as "Introduction into Research and Data Science" and "Selected Topics of Modern Artificial Intelligence", which introduce students to research methods, innovation processes and emerging computational paradigms (SAR, pp. 17–18). These courses contribute to analytical thinking and foundational research literacy appropriate for short-cycle level graduates, although their limited credit volume constrains the depth of engagement with scientific methodologies.

Student feedback highlights a demand for stronger coverage of containerised deployment technologies (e.g., Docker, Kubernetes), reflecting evolving industry expectations regarding software delivery pipelines and cloud-native architectures (SAR Annex 22), "Compilation of surveys and data analysis of students of the short-cycle professional higher education study programme 'Programming' (41484)". While elements of DevOps and cloud computing are present in the curriculum, the absence of a clearly defined dedicated module or structured integration pathway for container orchestration technologies suggests partial misalignment with rapidly evolving industry practices. This gap is reinforced by course description analysis indicating limited explicit learning outcomes related to containerised deployment workflows (SAR Annex 12), "Course descriptions").

Compliance with qualification frameworks and regulatory standards is clearly demonstrated. The programme learning outcomes correspond to LQF/EQF level 5 descriptors in terms of applied knowledge, problem-solving autonomy, and professional responsibility (SAR, pp. 11–12). The curriculum complies with the State Professional Higher Education Standard as defined by the Cabinet of Ministers Regulations No. 305 and learning outcomes formulation requirements under Regulations No. 322 (SAR, pp. 8–9; 16–17), as confirmed by formal compliance documentation (SAR Annex 09), "Compliance of the short-cycle professional higher education study programme 'Programming' (41484) with the state education standard". The acquisition of the fifth-level professional qualification is explicitly embedded in study programme objectives and assessment architecture (SAR, p. 16).

Overall, the study programme demonstrates strong structural coherence, regulatory compliance, and alignment with core labour market needs and technological trends.

2.2.2. In the case of a master's or doctoral study programme, the awarding of a degree is based on the achievements and findings of the relevant field of science or artistic creation.

Not applicable.

2.2.3. The study implementation methods contribute to the achievement of the aims and learning outcomes of the study courses and the study programme. Student-centred learning, teaching and assessment principles are considered.

The implementation model of the study programme combines structured academic governance with decentralised delivery across institutional units. Each study course has a designated responsible academic staff member who ensures content consistency, learning outcome alignment and quality standards, while local teaching staff implement the courses following

unified methodological guidelines (SAR, pp. 18–19). This model supports standardisation of academic expectations while enabling operational flexibility in regional delivery.

The study process integrates practice-oriented learning methods from early stages. Project-based assignments and individual practical tasks are introduced from the second semester, enabling students to apply theoretical knowledge in progressively complex contexts (SAR, p. 20; Annex 11, "The study schedule of the short cycle professional higher education study programme "Programming" (41484)"). The replacement of general courses with "Introduction to Project Management" strengthens applied project coordination and IT management competencies, supporting employability-oriented learning outcomes (SAR, p. 20).

Digital learning resources are systematically incorporated through MOOCs, external certification platforms, and programming trainers, which supplement formal instruction and provide exposure to current tools and industry-aligned learning content (SAR, p. 20). Course materials are based on original industry documentation, reinforcing authenticity and professional relevance of learning resources (SAR, p. 19). Joint courses with other RTU study programmes promote interdisciplinary exposure and resource efficiency (SAR, p. 18).

Student-centred learning is reflected in differentiated learning pathways and performance recognition mechanisms. Ambitious students may pursue advanced tasks, certifications, research-oriented activities and higher performance thresholds, enabling individualised academic progression (SAR, p. 20). The use of multiple programming languages and diverse digital platforms supports personalised learning trajectories and skills diversification. Continuous feedback mechanisms include anonymous surveys, digital communication systems and structured consultation formats (SAR, pp. 20–21).

Assessment practices combine traditional examinations with portfolio-based evaluation, creative project outputs and practical solution development, thereby assessing not only theoretical knowledge but applied competencies and professional readiness (SAR, p. 21). Internship assessment integrates external employer feedback and structured evaluation criteria, strengthening authenticity and triangulation of assessment evidence (SAR, p. 23).

Teaching staff receive training in the use of digital learning environments and institutional e-learning platforms, ensuring consistent access to materials, assessment tools and communication channels (SAR, p. 20). However, student survey data indicate persistent usability and reliability challenges in notification systems, including delayed or inconsistent communication regarding assignments, deadlines and schedule changes (SAR Annex 22, "Compilation of surveys and data analysis of students of the short-cycle professional higher education study programme "Programming" (41484)"). These operational shortcomings affect predictability of learning processes and may reduce the effectiveness of self-regulated learning despite otherwise strong digital infrastructure integration.

Student participation in quality assurance through surveys has historically been limited, with very low response rates in earlier years and gradual improvement only in the most recent cohorts (SAR Annex 22, "Compilation of surveys and data analysis of students of the short-cycle professional higher education study programme "Programming" (41484)"). While the increasing trend suggests improving engagement, the limited sample sizes constrain the representativeness and reliability of feedback data, reducing the analytical robustness of evidence used for continuous improvement.

In summary, implementation methods support applied competence development, individualised learning pathways and alignment with professional practices. Digital enrichment and project-based pedagogy enhance learning effectiveness.

2.2.4. If an internship is foreseen during the study programme, the opportunities and provision of internship offered to students, as well as the organization of work are effective. The tasks of the internship are related to the learning outcomes achievable. The internship complies with the requirements of regulatory enactments.

The internship component constitutes a substantial and structurally integrated element of the study programme, amounting to 24 credit points across two sequential placements (SAR, p. 17; Annex 14, "Methodological recommendations professional practice organize"). Internship I focuses on introductory professional exposure and basic task execution, while Internship II engages students in full-cycle software development activities, including requirements analysis, implementation, documentation and reflection (SAR Annex 14, "Methodological recommendations professional practice organize"). This staged design supports progressive competence development and alignment with study programme learning outcomes.

Internship placement opportunities are diversified across IT companies, public institutions, municipalities, non-governmental organisations and RTU structural units, providing exposure to varied organisational contexts and applied problem domains (SAR, p. 21). Industry participation is evidenced through named partner organisations and sample practice reports (SAR Annex 15, "Professional practice report sample"). Additionally, participation in institutional research projects allows a subset of students to engage in applied research environments, strengthening analytical and innovation-related competencies (SAR, p. 21).

Organisational processes for internships are formally regulated through contracts, dual supervision models, structured task definition, reporting requirements and public defence procedures (SAR Annex 14, "Methodological recommendations professional practice organize"). Students receive organisational support in internship placement, CV preparation and employer matching, while retaining the right to independently select internship sites (SAR, p. 22; Annex 6, "List of cooperation agreements binding to the short-cycle professional higher education study programme 'Programming' (41484)"). Assessment procedures incorporate employer feedback and commission-based evaluation, reinforcing objectivity and professional relevance.

Internship activities require active use of professional terminology and technical documentation, frequently in English, contributing to functional language competence development relevant to the IT sector (SAR, p. 22). The alignment between internship tasks and professional qualification standards ensures regulatory compliance and coherence with occupational expectations.

However, analysis of cooperation agreements indicates that several partnership contracts approach expiration within the next accreditation cycle, potentially affecting the stability of long-term placement capacity if not proactively maintained (SAR Annex 6, "List of cooperation agreements binding to the short-cycle professional higher education study programme 'Programming' (41484)"). While current internship provision appears sufficient, dependency on external partnerships requires systematic monitoring to ensure continuity and scalability.

Overall, internship organisation demonstrates strong procedural clarity, alignment with learning outcomes and regulatory compliance, providing effective transition mechanisms from academic study to professional practice.

2.2.5. In the case of a doctoral study programme, students have clearly defined promotion (doctoral theses defense) opportunities (if applicable).

Not applicable.

2.2.6. The topics of students' final theses are relevant to the field and correspond to the study programme.

The qualification paper (12 CP) serves as a capstone assessment integrating professional competences acquired throughout the programme (SAR, p. 17). Final thesis topics predominantly address applied domains such as innovation and emerging technologies, digitalisation solutions, web and mobile application development, and socially relevant digital services (SAR, pp. 24-25), demonstrating alignment with labour market needs and regional development priorities.

Industry representatives participate as members and chairs of examination committees, contributing to topic validation, assessment relevance and alignment with professional standards (SAR, p. 18). This external involvement enhances the authenticity and labour market relevance of final assessment processes.

A substantial proportion of qualification works focus on practical system development, enabling students to demonstrate stable professional skills and applied problem-solving capacity (SAR, p. 25). The thematic distribution reflects the applied orientation of a short-cycle professional study programme and supports employability objectives.

At the same time, the predominance of implementation-oriented projects limits exposure to analytical, experimental or research-intensive problem formulations. While this aligns with professional qualification objectives, it constrains the diversity of academic outputs and the potential for deeper innovation-oriented competencies within the final thesis component.

In conclusion, final thesis topics are consistently relevant, professionally oriented and aligned with study programme objectives and labour market expectations, supported by structured industry involvement.

Conclusions on this set of criteria, by specifying strengths and weaknesses

The analysis of Criteria 2.2.1–2.2.6 confirms that the content and implementation of the short-cycle professional higher education study programme “Programming” are generally coherent, professionally oriented and compliant with regulatory and qualification framework requirements. The study programme demonstrates clear alignment between objectives, learning outcomes, curriculum structure and the professional qualification standard, ensuring consistent development of applied software development competences and readiness for labour market entry or continuation of studies.

The curriculum is topical and reflects key technological trends in the IT sector, while project-based learning, structured internships and industry involvement strengthen the practical relevance and authenticity of learning. Student-centred learning principles are embedded through differentiated learning pathways, applied assessment methods and digital learning resources. Final thesis topics and assessment practices further reinforce the applied orientation and labour market relevance of the study programme.

At the same time, the analysis identifies several structural and operational limitations. Curriculum responsiveness to rapidly evolving technologies is uneven, particularly in areas highlighted by student feedback. The depth of research-oriented competence development remains constrained by limited curricular volume. Digital learning infrastructure usability and communication reliability affect predictability of the study process, while historically low student participation in feedback mechanisms limits the robustness of quality assurance evidence. In addition, long-term sustainability of internship partnerships depends on systematic renewal and management of cooperation agreements.

Overall, the study programme meets the core quality requirements of the criteria and demonstrates a stable applied education model, while several developmental dimensions require further consolidation to strengthen adaptability, feedback-driven improvement and long-term resilience.

Strengths:

1. Strong alignment with professional and regulatory requirements;
2. High practical relevance supported by structured internships and industry involvement.

Weaknesses:

1. Insufficient curricular coverage of modern deployment and containerisation technologies;
2. Limited depth of research and analytical competence development;
3. Digital learning infrastructure does not reliably support transparent communication and notifications;
4. Low historical student participation in quality feedback mechanisms;
5. Long-term sustainability of internship placements depends on timely renewal of cooperation agreements;
6. Final theses are thematically narrow and predominantly implementation-focused.

Assessment of the requirement [1] (applicable only to master's or doctoral study programmes)

No.	Requirement	Fully compliant	Partially compliant	Non compliant	Justification
R1	The study programme for obtaining a master's or doctoral degree is based on the achievements and findings of the respective field of science or field of artistic creation				Not applicable.

2.3. Resources and Provision of the Study Programme

Analysis

2.3.1. The study provision, scientific provision (if applicable), informative provision (including library), material and technical provision and financial provision comply with specific features and the conditions for the implementation of the study programme and its sub-programmes (if applicable), create prerequisites for the achievement of the learning outcomes and indicate the possibility to ensure a high quality study process.

The study provision of the study programme “*Programming*” complies with the conditions for the implementation of a short-cycle professional higher education study programme and ensures achievement of the intended learning outcomes. The study process is implemented according to the approved study plan and uses practice-oriented teaching and assessment methods appropriate for professional qualification acquisition (SAR, Section 3.4).

The informative provision of the study programme, including library and electronic resources, is sufficient for study programme implementation. During the visit, the experts visited the RTU RA library, computer labs, and lecture rooms. The library provides both public and individual study spaces, as well as books in paper and electronic formats. According (SAR, Section 3.5) there are 25 online scientific databases available for students and staff (Wiley Online Library, ACM Digital Library, ScienceDirect, SpringerLink etc). The computer classes are well equipped and can accommodate up to 20 students. Following the integration with Riga Technical University, students and academic staff have access to an expanded range of information resources, including the **RTU library system**, electronic databases and the **ORTUS information system**, which support access to study materials, academic information and independent learning (SAR, Section 3.4). At the same time, during the expert visit it was noted that additional administrative efforts, including targeted training and support measures, are required to ensure more effective and consistent use of these resources by academic staff.

The material and technical provision corresponds to the needs of the study programme and includes computer classrooms with appropriate hardware and licensed software (SAR, Section 3.4). During the expert visit, the LMS (Learning Management System) was demonstrated using examples of study courses, and students confirmed that academic staff actively use online resources and that the available digital learning materials are sufficient to support their studies (estudijas.rtu.lv). One student noted that some computer equipment appeared outdated; however, this observation was not confirmed by other students or by the inspection of the computer classrooms during the visit and is therefore considered an individual perception.

Scientific provision is ensured at a level appropriate for a short-cycle professional higher education study programme through the integration of industry practices and applied research elements into the study process (SAR, Section 3.4). During the expert visit, samples of students' final work were demonstrated, and meetings with industry partners confirmed that some thesis and internship topics are proposed by industry and, in certain cases, include elements of applied research.

The financial provision of the study programme ensures continuous implementation of the study process, including teaching activities, maintenance of technical resources and access to information resources. The SAR confirms that the available funding is sufficient to support stable programme delivery (SAR, Section 3.5). The number of fee-paying students is low, indicating that the study programme is financed mainly through state budget funding. In 2025, **38 state-funded study places** were allocated to the programme, while **only a limited number of students were enrolled on a fee-paying basis** (SAR, Section 3.5; Annex 7). This funding structure ensures stable implementation of the study programme but also highlights the programme's high dependence on state funding.

In conclusion, based on inspections of facilities, demonstrations of the LMS, review of information resources, examination of students' final works and discussions with students, staff and industry partners, the experts concluded that the available resources are sufficient to ensure stable implementation of the study programme and achievement of the intended learning outcomes.

2.3.2. In the case of a doctoral study programme, the study and science provision, including resources provided within the framework of cooperation with other scientific institutions and higher education institutions, meets the conditions for the implementation of the doctoral study programme, creates preconditions for achieving learning and research outcomes.

Not applicable.

2.3.3. The funding available to the study programme and its sub-programme (if applicable), funding sources and the use of funding ensures full implementation of the study process, the study programme and its sub-programme (if applicable) has the minimum number of students to ensure the profitability of the study programme (by separately indicating the different implementation options of the study programme) and facilitates the development of the study programme.

The funding available to the study programme “*Programming*” ensures full implementation of the study process. The study programme is financed primarily through **state budget funding**, complemented by tuition fees from fee-paying students, in accordance with national regulations and institutional financial policies (SAR, Section 3.5).

The SAR (Section 3.5) confirms that the available financial resources are sufficient to cover teaching activities, remuneration of academic staff, maintenance and renewal of material and technical resources, access to information resources, and organisational support of the study process. This ensures stable delivery of the study programme and achievement of the intended learning outcomes. The study programme is financed primarily through state budget funding allocated based on the number of state-funded study places, base study costs and cost coefficients for the thematic study field. In 2025, the basic cost of studies amounted to EUR 3,414.56 per study place (base cost EUR 1,896.98 × coefficient 1.8), with 38 state-funded study places and total state budget funding of EUR 130,267.00 allocated to the programme. The calculated cost per student without R&D funding is EUR 11,630.20, which is above the national average for short-cycle study programmes. These financial resources cover staff remuneration, infrastructure maintenance, learning materials and equipment renewal, ensuring stable delivery of the study programme and achievement of the intended learning outcomes (SAR, Section 3.5).

At the same time, the analysis of student numbers indicates that the **number of fee-paying students is low**, and the study programme currently relies mainly on state funding (SAR, Sections 3.3 and 3.5). Although the study programme is fully implemented, the relatively low overall number of students limits the economic efficiency and profitability of the study programme. This situation requires continued institutional support and the implementation of measures aimed at increasing student recruitment and improving long-term financial sustainability.

Despite these constraints, the current funding model allows for the maintenance of the study programme and supports its gradual development, including updating learning resources and technical infrastructure and supporting the professional development of academic staff (SAR, Section 3.5).

To conclude, the available funding and funding sources ensure full implementation of the study programme; however, the relatively low number of students highlights the need for further actions to strengthen economic sustainability and support future development.

Conclusions on this set of criteria, by specifying strengths and weaknesses

The analysis of Criteria 2.3.1 and 2.3.3 confirms that the study programme “*Programming*” is supported by adequate study, informative, material, technical and financial resources that ensure full implementation of the study process and achievement of the intended learning outcomes. The available infrastructure, digital learning environment and access to institutional information resources provide appropriate conditions for a practice-oriented short-cycle professional higher education study programme.

The integration with RTU has expanded access to informative and digital resources, while the material and technical provision supports laboratory work, project-based learning and applied

training. Scientific provision is ensured at a level appropriate for the study programme through the integration of industry practices and applied elements in student final works and internships.

The financial provision ensures stable study programme delivery; however, the low number of fee-paying and overall students limits economic efficiency and highlights the need for continued institutional support and targeted measures to strengthen long-term sustainability and development of the study programme.

Strengths:

1. Study, informative, material and technical provision ensuring achievement of learning outcomes and a practice-oriented study process.
2. Access to expanded institutional resources following integration with RTU, including digital platforms and library services.
3. Stable financial provision ensuring continuous implementation of the study programme.

Weaknesses:

1. Insufficient engagement of academic staff in the systematic use of newly available RTU resources following the merger.
2. High dependence on state budget funding due to a low number of fee-paying students.

Assessment of the requirement [2]

No.	Requirement	Fully compliant	Partially compliant	Non compliant	Justification
R3	Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.	X			The study, scientific, informative, material and technical, and financial provision of the study programme “Programming” comply with the conditions for study programme implementation and ensure achievement of the intended learning outcomes. The available resources support stable delivery of the study process, as evidenced in the Self-Assessment Report. Identified improvement areas do not hinder study programme implementation.

2.4. Teaching Staff

Analysis

2.4.1. The qualification of the teaching staff members involved in the implementation of the study programme complies with the requirements for the implementation of the study programme and the requirements set forth in the regulatory enactments, and it enables the achievement of the aims and learning outcomes of the study programme and the relevant study courses.

A total of 17 teaching staff members are involved in the implementation of the study Programme (the full list is provided in Annex 16 of SAR). Of these, 8 (47%) hold a Doctorate and 9 (53%) hold a Master's degree. Among them, 14 (82%) have been elected to academic positions in RTU, while 3 lecturers (18%) are visiting staff (unelected) who provide courses on Basics of Programming; Cloud Computing; Environmental, Labour Protection and Civil Defence; Introduction to Project Management; and Game Development. Even though, according to the SAR, "(53%) [of the teaching staff] represent IT and engineering", and "47% [of the teaching staff] represent social sciences and humanities", only 8 (47%) of the teaching staff have had some formal education in IT or in a related field (one member of staff has had education in Mathematics) and 2 of these are unelected. According to the statement by the RTU Rector in Annex 19 of SAR, the language proficiency of the academic staff involved in the implementation of the Study Programme complies with the regulations on the scope of state language knowledge and the procedure for testing state language proficiency for the performance of professional and official duties. Staff expertise aligns closely with the study programme's aims and learning outcomes, ensuring competent delivery of both theoretical foundations and practical, technology-focused components.

2.4.2. The higher education institution / college purposefully takes measures so that changes in the composition of the teaching staff do not negatively affect the quality of the implementation of the study programme and the compliance of the study programme with the requirements specified in regulatory enactments.

The changes that occurred during the reporting period have affected both the number and composition of the teaching staff involved in the implementation of the study programme: in the previous accreditation period the study programme was being implemented by 21 (according to the SAR, 20 according to the previous assessment report) teaching staff members. In contrast, the study programme is currently being implemented by 17 members of the teaching staff. The decreased number is due to the optimization of study courses, that was achieved by replacing small volume units with study courses of at least 3 CP, following a recommendation of the previous assessment report. As a result of these changes, the share of elected teaching staff has increased from 71% to 82% and the share of teaching staff members holding a doctorate has increased from 43% to 47%. Changes in the composition of the teaching staff have also occurred, because of:

- a change of the profile of the professional activity of a member of the teaching staff which also resulted in replacing the course "Security of Terminal Equipment" (3 CP) with the course "Information Systems Security" (3 CP);
- the restructuring of the block of general education courses where a general humanities/social sciences course was replaced by a new study course on "Communication Technologies, Psychology and Ethics" (3 CP);
- the adaptation of some study courses, such as "Introduction to Research and Data Science" (3 CP) and "Introduction to Project Management" (3 CP) to the current needs of the IT industry.

As the experts learned during the interviews of the site visit, course teaching assignments are made according to the qualifications and competences of the staff and no staff member reported having been assigned to teach a course which did not lie within their fields of knowledge and experiences. Further, RTU has established mechanisms that ensure continuity and protect study programme quality despite any changes in teaching staff. A stable core of academically qualified lecturers is complemented by industry practitioners, reducing dependence on individual staff members. Integration into the wider RTU structure provides access to a broad academic pool, methodological support, and shared digital-learning resources, ensuring smooth transitions when staffing changes occur. Mandatory professional-development requirements further support consistent teaching quality.

2.4.3. The scientific publications and the involvement in research- related projects of the academic staff involved in the implementation of the doctoral study programmes contribute to the implementation of a high-quality doctoral study programme (if applicable).

Not applicable.

2.4.4. Each member of the academic staff in the last six years has published in peer-reviewed editions, including international editions (if the staff member has worked for a shorter period, the number of publications should be indicated in proportion to the period worked) or artistic achievements (for example, exhibitions, films, theater performances and concerts) or five years of practical experience (except for experience in the implementation of the study programme) in accordance with the Law on Higher Education Institutions.

According to Annex 20 of the SAR and to the CVs of the teaching staff members in Annex 17 of the SAR, all members of the teaching staff involved in the implementation of the study programme have published in peer-reviewed editions, including international editions, in the last six years. An exception is one staff member, who has not published but has more than 5 years of professional experience in industry on occupational safety and health. Most members of the teaching staff involved in the implementation of the study programme also have some professional experience, of varying nature and extent, in diverse domains. According to Annex 19 of the SAR, the research activity of the teaching staff focuses on the engineering and technology area of the SciVal classification: 83.3% of the publications in the period 2022-2025 are classified as such. According to the same Annex, in the period 2022-2025, the number of publications in Q1-Q2 journals increased from 4 to 14.

2.4.5. A mechanism for mutual cooperation of the teaching staff in the implementation of the study programme has been established, it ensures the achievement of the aims of the study programme and the interconnection of study courses within the study programme.

Several mechanisms for ensuring the cooperation of teaching staff in the implementation of the study programme exist:

- Study programme development meetings where academic staff, employers, graduates and students participate, evaluate the content of study courses and agree on necessary changes to be made (SAR, Section 3.2);
- Meetings aiming at coordinating the content of study courses to avoid overlapping (SAR, Section 3.2);

- After the merger of RTA with RTU, on April 1, 2025, active communication via online meetings, e-mails, and visits with the programme directors of the RTU study direction "Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Management and Computer Science" is taking place. Such communication regards the conformity of the study programme with the study field development plan, the coordination of the implementation of study courses and the further development of the programme (SAR, Sections 1.1 and 3.2);
- After the merger, RTU RA has adopted RTU's good practices in the organization of the study process. An example of such practice is that for each study course a "responsible teaching staff member" and the lecturer are assigned. The lecturer cooperates and consults with the responsible teaching staff on the implementation of the study course (SAR, Section 3.2);
- Regular consultations and communication between lecturers occur via the RTU platform ORTUS, e-mail and face-to-face meetings. The timing and format(s) of consultations are defined in each semester (SAR, Sections 2.3 and 3.2).

Conclusions on this set of criteria, by indicating strengths and weaknesses

The teaching staff are sufficiently qualified to enable the aims and learning outcomes of the study programme as a whole and of the individual courses assigned to them. This not only derives from the submitted CVs; it has also been confirmed by the interviews that the experts had with students, alumni, and employers during the site visit. The members of the teaching staff fulfil the requirements set out in the regulatory enactments (Regulation of Academic Positions in RTA, Annex "15. Regulation of academic position.pdf").

The changes made in the number and composition of teaching staff since the previous assessment have not negatively affected the quality of the implementation of the study programme, nor its compliance with the requirements specified in the pertinent regulatory enactments. Judging by the process followed and the results achieved in this case, the panel concludes that the HEI has in place sufficiently effective mechanisms to ensure that reasonably extensive changes in the composition of the teaching staff will neither adversely affect the quality of the study programme nor will they jeopardize its compliance with the pertinent regulations.

All but one (who is an industry specialist with more than five years of professional experience) members of staff have been active in research in the past six years. This is confirmed by both the track record of publications and the participation in research projects. Some members are more active than others and some have been extensively publishing. Accordingly, all staff meet the pertinent requirements.

The teaching staff are cooperating well among them, by using several mechanisms that the HEI has made available to this end. The merger of RTA with RTU is expected to enhance this cooperation even further and expand it to cooperation with other study programmes in the relevant RTU study field.

Strengths:

1. Members of the teaching staff qualified and competent for the study programme
2. Several members of the teaching staff have significant practical experience.
3. Good balance between permanent (elected) and visiting (unelected) members of teaching staff.
4. All staff have the required level of knowledge of English.
5. All staff are active in research, and some are extensively publishing.

6. Good cooperation among teaching staff members and with the RTU Riga-based faculty leadership and staff.

Weaknesses:

1. Low percentage of staff with IT and related fields background.
2. Unbalanced engagement with and performance in research among the teaching staff.

Assessment of the requirement [3]

No.	Requirement	Fully compliant	Partially compliant	Non compliant	Justification
R3	Compliance of the qualification of the academic staff and visiting professors, visiting associate professors, visiting docents, visiting lecturers and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.	X			Based on the analysis and the conclusions presented above, the study programme is fully compliant with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments.

2.5. Assessment of the Compliance of the Study Programme “PROGRAMMING”

No.	Points	Fully compliant	Partially compliant	Non-compliant	Justification
1.	The study programme complies with the State Academic Education Standard or the Professional Higher Education Standard, including the minimum requirements for the content of the mandatory course in civil protection and the training of employees in civil protection issues whilst implementing the study programme.	X			Based on the provided documents (SAR; Annex 9: “Compliance of the short-cycle professional higher education study programme "Programming" (41484) with the state education standard”; Annex 1 - Annex 29) and the expert visit, it can be concluded that the study programme complies with the state standard.

2.	The study programme/ subprogramme (if applicable) complies with a valid professional standard or the requirements for the professional qualification, if the completion of the study programme leads to a professional qualification (if applicable).	X			Based on the provided documents (SAR; Annex 10: “Compliance of the short-cycle professional higher education study programme "Programming" with the 5th level professional qualification standard "Programmer"”; Annex 1 - Annex 29) and the expert visit, it can be concluded that the study programme complies with the professional qualification standard “Programmer”.
3.	The descriptions of the study courses and the study materials have been prepared in all languages in which the study programme is implemented, and they comply with the requirements set forth in Section 56 ¹ , Paragraph two and Section 56 ¹ , Paragraph two of the Law on Higher Education Institutions.	X			Based on the provided study course descriptions and documents describing study materials (SAR; Annex 01 - Annex29) and the expert visit, it can be concluded that they comply with the requirements set forth in Section 561, Paragraph two and Section 56, Paragraph two of the Law on Higher Education Institutions. It would be recommended to ensure elements of course descriptions are presented in a uniform format, for example, the format of the description of course prerequisites.
4.	The sample of the diploma to be issued for the acquisition of the study programme complies with the procedure according to which state recognised documents of higher education are issued.	X			RTU has provided a sample diploma (English & Latvian variations) (Annex 2: “Programmer - diploma, diploma supplement SAMPLE”). The sample diploma issued upon completion of the study programme fully complies with the procedures and formal requirements for issuing state-recognised

¹ Law “Amendments to the Law on Higher Education Institutions” adopted on 14.07.2022., in force from 11.08.2022. Published: Latvijas Vēstnesis, 144, 28.07.2022.

					higher education documents as stipulated by the applicable regulatory enactments (Regulation no. 202).
5.	The academic staff of the academic study programme complies with the requirements set forth in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions.				Not applicable.
6.	Removed ²				Not applicable.
7.	At least five teaching staff members with a science doctoral degree are among the academic staff of an academic doctoral study programme, at least three of which are experts approved by the Latvian Science Council in the respective field of science (if applicable, for period till August 1, 2024) At least five teaching staff members with a doctoral degree are among the academic staff of a professional doctoral study programme in arts (if applicable).				Not applicable.
8.	The teaching staff members involved in the implementation of the study programme are proficient in the official language in accordance with the regulations on the level of the official language knowledge and the procedures for testing official language proficiency for performing professional duties and office duties.	X			Based on the provided academic staff mapping for study courses (Annex 16: "Basic information about the academic staff involved in the short-cycle professional study programme "Programming" (code 41484)"), all teaching staff involved in the implementation of the study programme meet the required level of official language proficiency for performing professional and academic duties, as all listed staff members are marked as "satisfying" in relation to official language knowledge in the academic staff register (Annex 16, "Academic staff basic information").
9.	The teaching staff members to be involved in the implementation of				Not applicable.

	the study programme have at least B2-level knowledge of a related foreign language, if the study programme or any part thereof is to be implemented in a foreign language (if applicable).				
10.	The sample of the study agreement complies with the mandatory provisions to be included in the study agreement.		X		RTU has provided a sample study agreement (SAR Annex 3: "Sample of Study Agreement"). The sample study agreement demonstrates partial compliance with the mandatory content requirements for study agreements as stipulated by Cabinet of Ministers Regulation No. 70 "Studiju līgumā obligāti ietveramie noteikumi", as the agreement template does not explicitly include a field for the student's declared place of residence address, which is required by the regulation.
11.	The higher education institution / college has provided confirmation that students will be provided with opportunities to continue their education in another study programme or another higher education institution or college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.		X		RTU has provided a guarantee confirming that students will be offered the opportunity to continue their studies in another study programme in the event that the implementation of the study programme is terminated (SAR Annex 4, "Guarantee to continue studies"). However, the guarantee refers exclusively to continuation opportunities in first-cycle (bachelor level) study programmes, whereas the evaluated study programme is a short-cycle professional higher education programme, which results in partial compliance with the criterion. In order to ensure full compliance, it is essential that an appropriate agreement or guarantee covering continuation opportunities at the

					corresponding short-cycle level or equivalent pathways is concluded prior to the granting of accreditation.
12.	The higher education institution / college has provided confirmation that students are guaranteed compensation for losses if the study programme is not accredited or the licensing of the study programme is cancelled due to the actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.	X			RTU has provided a guarantee confirming that students are entitled to compensation for losses if the study programme is not accredited or its licensing is cancelled due to the actions or omissions of the higher education institution and the student does not wish to continue studies in another study programme (SAR Annex 5, "Guarantee compensation for losses"). The provided guarantee fully complies with the requirements of the criterion.
13.	The joint study programmes comply with the requirements prescribed in Section 55 ¹ of the Law on Higher Education Institutions (if applicable)				Not applicable.
14.	Compliance with the requirements specified in other regulatory enactments that apply to the study programme being assessed (if applicable). For instance, requirements for subprogrammes or foreign language usage in study programme implementation that specified in the Law on Higher Education Institutions .				Not applicable.

Assessment of the requirement [4]

No.	Requirement	Fully compliant	Partially compliant	Non compliant	Justification
R4	Compliance of the study programme with the requirements set forth in the Law on Higher		X		The criterion is evaluated as partially compliant, as two formal deficiencies were identified: the guarantee for continuation of

	Education Institutions and other regulatory enactments				studies applies only to first-cycle study programmes and does not cover continuation pathways appropriate to a short-cycle professional higher education study programme, and the sample study agreement does not explicitly include the student’s declared place of residence address as required by Cabinet of Ministers Regulation No. 70. While both issues are procedural in nature and do not affect the substantive implementation of the study programme, their resolution is necessary to ensure full regulatory compliance prior to the granting of accreditation.
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General conclusions about the study programme, indicating the most important strengths and weaknesses of the study programme.

The study programme overall complies with the regulatory requirements applicable to short-cycle professional higher education study programmes. The identified cases of partial compliance relate to formal documentation and guarantee alignment and do not constitute deficiencies that cannot be eliminated within the accreditation period.

No deficiencies have been identified that would prevent the lawful implementation of the study programme in all declared implementation forms, languages and locations.

Accordingly, the study programme meets the compliance requirements subject to timely elimination of the identified formal deficiencies.

Assessment of the study programme:

Excellent	<u>Good</u>	Average	Unsatisfactory
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2.6. Recommendations for the Study Programme “PROGRAMMING”

Short-term recommendation:

1. Organise targeted training and internal support activities for academic staff to increase awareness and practical use of newly available RTU resources (e.g. digital platforms, library services and information systems), ensuring their more systematic integration into the study process (deadline: one year).
2. Strengthen academic support and early intervention measures, particularly in the first study year, by enhancing academic advising, monitoring student progress and providing timely support to students at risk of academic failure (deadline: one year).
3. Approve and implement a unified minimum standard for digital communication in all study courses, defining mandatory notification channels, publication deadlines and update procedures in the learning management system (deadline: one year).
4. Formalise and activate a procedure requiring structured promotion and in-class allocation for student survey completion, targeting a minimum response rate of at least 50% in the next survey cycle (deadline: two years).
5. Ensure that elements of course descriptions are presented in a uniform format, for example, the format of the description of course prerequisites (deadline: one year).
6. The institution must ensure full compliance with Cabinet of Ministers Regulation No. 70 on mandatory provisions of study agreements by updating the study agreement template to explicitly include a field for the student's declared place of residence address (deadline: until the Commission's decision is made).
7. The institution must revise and conclude an appropriate agreement/guarantee ensuring that students are provided with the possibility to continue studies in a corresponding short-cycle professional higher education programme, in case the study programme implementation is terminated (deadline: until the Commission's decision is made).

Long-term recommendation:

1. Develop and implement a sustainable student recruitment and study programme promotion strategy aimed at increasing enrolment, particularly the number of fee-paying students, in order to reduce reliance on state budget funding and strengthen the long-term financial sustainability of the study programme.
2. Integrate structured learning outcomes, practical assignments and assessment criteria on containerised deployment technologies (e.g., Docker, CI/CD, orchestration fundamentals) into at least one existing study course or a newly introduced module, with updated course descriptions.
3. At least two study courses and the qualification paper guidelines need to be revised to include mandatory analytical or evaluative components (e.g., performance comparison, validation of technical decisions, data analysis), ensuring measurable development of higher-order analytical competences.
4. The qualification paper regulations need to be updated to require inclusion of analytical, comparative or validation elements in all final theses to increase thematic diversity beyond purely implementation-focused projects.

5. Increase the percentage of staff, particularly permanent staff, with IT and related fields background.
6. Encourage all staff, including by providing incentives, to engage with research and publishing, in high quality venues.

III Assessment of the Requirements for the Study Programme

	Requirements	Fully compliant	Partially compliant	Non-compliant	Justification
R1	The study programme for obtaining a master's or doctoral degree is based on the achievements and findings in the respective field of science or field of artistic creation.				Not applicable.
R2	Compliance of the study provision, science provision (if applicable), informative provision (including library), material and technical provision, and financial provision with the conditions for the implementation of the study programme and ensuring the achievement of learning outcomes.	X			The study, scientific, informative, material and technical, and financial provision of the study programme "Programming" comply with the conditions for programme implementation and ensure achievement of the intended learning outcomes. The available resources support stable delivery of the study process, as evidenced in the Self-Assessment Report (SAR, Sections 3.4 and 3.5). Identified improvement areas do not hinder programme implementation.
R3	Compliance of the qualification of the academic staff, visiting professors, visiting associate professors, visiting docents, visiting lecturers, and visiting assistants with the conditions for the implementation of the study programme and the requirements set out in the respective regulatory enactments	X			Based on the analysis and the conclusions presented above, the study programme is fully compliant with the requirements of this criterion.

R4	Compliance of the study programme with the requirements set forth in the Law on Higher Education Institutions and other regulatory enactments		X	The criterion is evaluated as partially compliant, as two formal deficiencies were identified: the guarantee for continuation of studies applies only to first-cycle study programmes and does not cover continuation pathways appropriate to a short-cycle professional higher education programme, and the sample study agreement does not explicitly include the student's declared place of residence address as required by Cabinet of Ministers Regulation No. 70. While both issues are procedural in nature and do not affect the substantive implementation of the study programme, their resolution is necessary to ensure full regulatory compliance prior to the granting of accreditation.
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