

## APPLICATION

Study field "Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science" for assessment

Study field	<i>Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science</i>
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# **Self-evaluation report**

Study field "Information Technology, Computer Hardware,  
Electronics, Telecommunications, Computer Management,  
and Computer Science"

EKA University of Applied Sciences

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# 1. Information on the Higher Education Institution/College

## 1.1. Basic information on the higher education institution/ college and its strategic development fields,.

The EKA University of Applied Sciences (hereinafter - EKA) was founded in 1998. The higher education institution is located at 62 Pērnavas Street, Riga. The name of the EKA University of Applied Sciences in Latvian (Ekonomikas un kultūras augstskola) combines two spheres - social (economics) and humanitarian (culture), which at first seem to be opposite, but in fact are interconnected and form the basis of the development of our society. Therefore, the stylized Möbius strip has been chosen as EKA's logo, which depicts two surfaces that, when interconnected, pass into infinity. This is how EKA offers many different opportunities - by educating and developing, one can achieve his/ her career and life goals. The shape of the Möbius strip represents the movement, symbolizing the dynamism of the university - EKA is constantly evolving, promptly responding to the latest trends in education, science, demand in the labour market and the interests of students.

### *Vision*

EKA is developing as an interdisciplinary multicultural university, which prepares knowledgeable, creative and independent personalities for the global labour market who are excellent professional leaders in their industries. EKA is associated with competitive education, internationally acknowledged diplomas, high professional quality of our undergraduates and graduates, well-developed scientific research base and highly qualified academic and administrative personnel.

### *Mission*

The EKA University of Applied Sciences is a higher education institution which, based on innovative methods and a multicultural approach, ensures the attainment of academic and vocational higher education in line with the European Union level, promotes the development of students' creative potential and entrepreneurial spirit and their motivation for lifelong learning.

In 2022/2023, 16 study programmes are implemented at EKA:

- Management, administration and real estate management (8 study programmes);
- Economics (3 study programmes);
- Law (1 study programme);
- Arts (3 study programmes);
- Information technology, computer engineering, electronics, telecommunications, computer management and computer science.

The total number of students on 1st October, 2022 slightly increased compared with previous years: In 2018 - 1101 students, in 2019 - 1083 students, in 2020 - 1106 students, in 2021 - 1115 students, in 2022 - 1121 students. The positive dynamics of the students number has been achieved by changing the content of the studies, introducing new teaching methods, as well as developing a marketing strategy, opening new study programmes, and starting a foreign students attraction.

In line with [EKA's development strategy](#), the following priorities have been:

- Providing and developing the study process and content in line with regulatory requirements and trends in higher education and the labour market.

*Aim:* Prepare competitive professionals in the fields of business, information technology, culture and art that are relevant to current Latvian and international economic needs, who can use the acquired knowledge and practical skills for successful career and achievements.

- Ensuring and developing the scientific and creative process in line with regulatory requirements and trends in the world.

*Aim:* Achieve a high level of internationally recognised research and innovation results promoted by purposeful collaboration of the teaching staff, students, local and international partner universities, as well as industry representatives, thus ensuring research-based studies, relevant scientific qualification of the teaching staff, and the research needed for industry.

- Development of lifelong learning.

*Aim:* To be an open and dynamic university which is flexible with regard to market topicalities and responsive to a diverse range of local and international competences development and recognition.

The priorities identified are in line with Latvian strategic planning documents, including the Education Development Guidelines, the Latvian National Development Plan and other documents (see EKA Development Strategies, p.7 ).

According to the priorities determined, action directions are defined in the following areas of activity, the objectives and indicators to be achieved of which are indicated in Paragraph 2 of the Development Strategy:

- quality assurance;
- staff development;
- internationalization;
- strategic partnership;
- image and reputation;
- resources (material and technical base and infrastructure).

## **1.2. Description of the management structure of the higher education institution/ college, the main institutions involved in the decision-making process, their composition (percentage depending on the position, for instance, the academic staff, administrative staff members, students), and the powers of these institutions.**

The management of the higher education institution is ensured in accordance with the requirements of regulatory enactments. The main institutions are the Constitution meeting, the Senate, the Study Councils, the Students' Council.

According to the Constitution of the EKA University of Applied Sciences (members: 60% academic staff, 20% students, 20% general staff), the Constitution meeting is the highest collegial representative and management body and decision-making body in academic and scientific matters. In accordance with the Regulation of the Constitutional meeting (available in the e-environment ), its main functions are:

- adopt and amend the Constitution of the Higher Education Institution;
- elect and dismiss the Rector;
- listen to the Rector's report;
- elect the Senate;

- elect the Academic Arbitration Court;
- approve the Regulation of the Constitution meeting, the Senate and the Academic Arbitration Court;
- is entitled to adopt conceptual issues of operation and development of the Higher Education Institution for examination and decision-making on them.

In accordance with the Constitution of the EKA University of Applied Sciences, the Senate (members: 75% academic staff, 20% students and 5% rector) is a collegial management body and decision-making body of the staff of the Higher Education Institution, which approves the procedures and regulations governing all fields of activity of the Higher Education Institution. According to the Senate Regulation (available in the e-environment: Moodle, access data in Annex1), it:

- elects academic staff;
- approves study programmes, their changes, plans and calendar schedules;
- decides on issues of academic and scientific activity of a higher education institution;
- approves internal regulatory enactments, except for those which, in accordance with the EKA Constitution, are approved by the Constitution meeting;
- The Senate listens to reports on the activities of individual academic staff and student formations, examines various submissions addressed to the Senate;
- approves the Scientific Development Strategy, the internationalisation strategy, the self-assessment reports;
- other basic issues related to the university study process are also decided.

In accordance with the Regulation of the Study Council (members: 20% administrative staff, 35% academic staff, 10% students, 10% general staff, 25% employers), the Study Council:

- evaluates the content of study programmes in the field of study, their implementation process and development strategy;
- examines the self-assessment report of the study direction and submits it to the Senate for approval;
- reviews and submits for approval changes in the field of study and/or study programme(s);
- nominates candidates for academic positions in the field of study.

In total, the university is operated by 28 representatives of the administration and general staff.

A list of EKA's main laws, regulations and rules is available in Annex 1.

### **1.3. Description of the mechanism for the implementation of the quality policy and the procedures for the assurance of the quality of higher education. Description of the stakeholders involved in the development and improvement of the quality assurance system and their role in these processes.**

EKA has established an internal quality system in accordance with the requirements of Part 1 of the "Standards and Guidelines for Quality Assurance in the European Higher Education Area" (ESG) standard. EKA quality system operates in accordance with the [EKA Quality Policy](#) approved by the EKA Senate meeting (Protocol No. 168) on 16 February 2022. The quality system is designed to contribute to the achievement of EKA's vision, satisfy the wishes of our students and stakeholders, and increase their satisfaction through regular improvements.

The quality policy forms EKA's sustainable development framework, [EKA's approach of excellence](#) is related to it and it is aimed at committing to meet the requirements set by the regulatory framework in Latvia and the European Standards - ESG. EKA's quality policy focuses on achieving EKA's mission and strategic objectives. It is implemented in order to promote the formation of a quality culture at the university, to ensure improvement in performance and staff development, to ensure quality management and a student-centred approach in the educational process.

EKA's internal quality assurance system has been established and implemented in accordance with the requirements of Section 5(2<sup>1</sup>) of the Law on Higher Education Institutions of the Republic of Latvia. The quality system is described in the quality manual "EKA's Quality Management System Manual". The handbook defines the quality system model, improvement cycle, document hierarchy, responsibilities, processes and their interactions, study quality assurance and system evaluation, in accordance with the quality management system self-assessment scheme established by EKA. The EKA Quality Management System Manual shows EKA's quality system and is designed to create a common understanding of EKA's quality system and quality standards for staff and to ensure transparency of processes. The Quality Management System Manual is available to every employee on the EKA Moodle platform and is also placed in the main server of the EKA server.

When maintaining and planning improvements to the quality system, the recommendations of accreditation experts, the results of regular surveys of students and graduates, the results of employer surveys and satisfaction indicators and preferences of other involved parties are taken into account. Important criteria for evaluating EKA's performance and results are the assessment and recommendations of accreditation experts, the level of satisfaction of students and graduates, feedback from employers.

EKA engages its employees, students, employers and graduates in quality assurance and development through collegiate governing bodies. External stakeholders participate in the evaluation of study processes in the Senate, Study Councils and evaluate study results by taking part in final examination commissions, practices and accreditation processes. EKA ensures collaboration with stakeholders in such activities as planning strategic goals, planning study results, planning study content, infrastructure development, staff provision and development, evaluation of achievements.

The heads of structural units ensure compliance with quality procedures and the achievement of results. EKA staff and external stakeholders are involved in updating and regularly improving study programmes and developing new study programmes.

Information on EKA's quality policy is published on EKA's website in the section "Documents" or on Moodle "EKA Administration" (access data are in Annex 1)

**1.4. Fill in the table on the compliance of the internal quality assurance system of the higher education institution/ college with the provisions of Section 5, Paragraph 2(1) of the Law on Higher Education Institutions by providing a justification for the given statement. In addition, it is also possible to refer to the respective chapter of the Self-Assessment Report, where the provided information serves as justification.**

1.	The higher education institution/ college has established a policy and procedures for assuring the quality of higher education.	<ul style="list-style-type: none"> <li>- Quality policy developed.</li> <li>- Quality Management System Manual developed. (Paragraph 1.3 of the Report)</li> </ul> <p>According to the quality system model implemented by EKA, results planning, process management, analysis of the achieved results and certain actions to improve the situation are carried out. Procedures for quality assurance are included in the Quality System Manual, Study Regulations, employee performance assessment procedure, etc. guest lectures and survey procedures have been established and are being implemented to ensure quality.</p> <p>Quality assurance is evaluated in accordance with the fulfilment of the planned goals.</p>
2.	A mechanism for the creation and internal approval of the study programmes of the higher education institution/ college, as well as the supervision of their performance and periodic inspection thereof, has been developed.	<p>The creation, approval, control and supervision of the activities of study programmes take place in accordance with the procedures for the development, approval and updating of study programmes (Minutes of the EKA Senate meeting No. 177 of 16 November 2022) and the Regulation "On the preparation, updating and approval of the description of the content and implementation of studies" (Protocol of the EKA Senate meeting No. 138 of 15 May 2019). The EKA Senate evaluates newly developed directions of study and programmes.</p> <p>In order to ensure the process of developing, reviewing and updating the study course description, guidelines for the development of the study course description have been developed by the EKA University of Applied Sciences (Protocol of the EKA Senate meeting No. 132 of 5 October 2018). The quality assurance of studies is described in the Quality Management System Manual (Paragraph 1.3 of the Report). The head of the study direction, the director of the relevant programme, the vice-rector for studies and development, the quality manager, students, graduates and representatives of the industry are involved in ensuring the quality of study programmes. The main decisions, based on the analysis of the results, are accepted at the Study Council and administration meeting of the relevant study direction.</p>

3.	The criteria, conditions, and procedures for the evaluation of students' results, which enable reassurance of the achievement of the intended learning outcomes, have been developed and made public.	<p>The EKA Regulation "On the preparation, updating and approval of the description of the content and implementation of studies" (Protocol of the EKA Senate meeting No. 138 of 15 May 2019) specifies the creation of a description of the study course that determines the criteria for the evaluation of study results, providing for how the achievement of a certain result is verified.</p> <p>Study course descriptions are published and available to students in EKA e-learning environment next to the materials of each study course.</p>
4.	Internal procedures and mechanisms for assuring the qualifications of the academic staff and the work quality have been developed.	<p>EKA has developed and implemented the procedure for evaluating the performance of employees (Protocol of the EKA Senate meeting No. 175 of October 12, 2022). The procedure includes questionnaires for the evaluation of the academic staff. When evaluating the academic staff, the information included in this questionnaire is taken into account. Pedagogical work, scientific and creative activities, international activities, results of student surveys and performance of the e-study course in accordance with the existing requirements are evaluated.</p> <p>EKA, in accordance with the Cabinet Regulation No. 129 of 25.02.2021, has developed and implemented regulations on the assessment of professors and associate professors. The evaluation of the performance of professors and associate professors is carried out by the EKA Scientific Council. To measure the performance of academic staff, an assessment scale is used.</p> <p>EKA, in accordance with the developed personnel policy (Protocol of the EKA Senate meeting No. 168 of 16 February 2022), provides support to its employees for raising their qualifications by organizing training methodological conferences and training seminars. The materials are available in EKA e-learning environment Moodle.</p> <p>Available: Moodle "EKA Administration"</p>

5.	The higher education institution/ college ensures the collection and analysis of the information on the study achievements of the students, employment of the graduates, satisfaction of the students with the study programme, efficiency of the work of the academic staff, the study funds available, and the disbursements thereof, as well as the key performance indicators of the higher education institution/ college.	<p>Information on student performance is accumulated in the Nexus database and is regularly analysed by the study council.</p> <p>In order to find out the employment of graduates, the satisfaction of students and university employees, surveys are regularly conducted and their results are analysed.</p> <p>The administration analyses the results of the surveys and places the analysis summary on EKA's website.</p> <p>The procedure for organising the regular surveys is described in the EKA's Quality Management System Manual.</p> <p>The information about study resources is analyzed each semester by checking available resources. Additional resources are provided on the basis of academic staff requirements.</p> <p>The essential indicators of the university's activities are analysed and reflected in the EKA yearbook.</p> <p>Available: Moodle "EKA Administration" and EKA website "Student Guide"</p>
6.	The higher education institution/ college shall ensure continuous improvement, development, and efficient performance of the study field whilst implementing their quality assurance systems.	<p>The main priority of EKA's quality assurance system is to ensure and develop the quality of the study direction and study process.</p> <p>The quality assurance of studies is described in the Quality Management System Manual. EKA graduates and representatives of industry companies also participate in the improvement of the directions.</p> <p>The main achievements and shortcomings of the university study process are analysed and reflected in the EKA yearbook.</p>

## 2.1. Management of the Study Field

### 2.1.1. Aims of the study field and their compliance with the scope of activities of the higher education institution/ college, the strategic development fields, as well as the development needs of the society and the national economy. The assessment of the interrelation of the study field and the study programmes included in it.

The development strategy and objectives of the study direction have been established in accordance with the mission, vision, values, strategy and aims of the higher education institution, while the objectives of the study programmes are formed in accordance with the aims of the study direction.

The study direction is implemented in accordance with the regulatory enactments of the EU and the Republic of Latvia encl. taking into account the priorities of the National Development Plan (hereinafter - the NDP2027) and the Sustainable Development Strategy of Latvia until 2030.

In the implementation of the study direction, the priority of the NDP2027 "Knowledge and skills for personal and national growth" is taken into account, providing opportunities to study throughout the life and promoting the development of research skills. Within the framework of the study direction, students develop their digital skills that correspond to the highest level 2.2 of the Digital Competence Framework, because the specifics of the programme provides for the creation, adaptation, security and problem solving of digital content.

The strategic aim of the EKA University of Applied Sciences 2023 is to be one of the leading universities in Latvia with an excellent reputation in the provision and development of study, scientific and creative processes. There are three priorities in the development of the EKA University of Applied Sciences:

1) Providing and developing the study process and content in line with regulatory requirements and trends in higher education and the labour market. **Aim:** Prepare competitive professionals in the fields of business, information technology, culture and art that are relevant to current Latvian and international economic needs, who can use the acquired knowledge and practical skills for successful career and achievements.

2) Ensuring and developing the scientific and creative process in line with regulatory requirements and trends in the world. **Aim:** Achieve a high level of internationally recognised research and innovation results promoted by purposeful collaboration of the teaching staff, students, local and international partner universities, as well as industry representatives, thus ensuring research-based studies, relevant scientific qualification of the teaching staff, and the research needed for industry.

3) Development of lifelong learning. **Aim:** To be an open and dynamic university which is flexible with regard to market topicalities and responsive to a diverse range of local and international competences development and recognition.

**The aim** of the study direction is to prepare qualified specialists in the field of ICT for work at enterprises, organizations and state and municipal institutions who are able to perform tasks related to the profession and are ready to continuously improve their knowledge and skills in a changing environment.

Study Direction tasks:

1. Provide a study process that complies with the laws and requirements of the labour market, as well as student-centred approach in higher education;
2. To involve field professionals in the implementation of the study programme;
3. Develop infrastructure and facilities under the study direction implementation needs;
4. To promote qualification development of the teaching staff in educational and scientific fields;
5. To develop research activities in the study direction;
6. To develop international collaboration with related higher education institutions, enterprises and organizations;
7. Increase the number of students by achieving a minimum of 25 people in the group;
8. Implementation and development of the IT programme in English.

Study direction objective and tasks are formulated in the light of the University's strategic goals and objectives, and contribute to their achievement:

1. The number of students in the study direction supplements the total number of students in

the institution of the university;

2. The composition of the staff of the study direction is approaching the set objective - from 24 employed in the marketing direction, 25% or 6 teachers have doctoral degree, 67% or 16 teachers have master's degree, while 8% of them, or 2 teachers are doctoral students.
3. Within the framework of the study direction, opportunities are provided to start studies in later stages of studies, as well as to acquire separate study courses as a listener.
4. The study programme is implemented in Latvian and English.

The objective of the study programme "Information Technologies" located therein also corresponds to the strategic objective of the study direction:

Train programming engineers for professional information technology industry, whose knowledge, skills and abilities meet the demands of modern labour market.

The development strategy of the study direction is in line with the overall development strategy of the higher education institution and the following development strategic tasks have been set for the study direction:

1. Continuously ensure compliance of study programmes with the requirements of the legislation regulating the field of higher education in Latvia.
2. To ensure the conformity of the study programme with the requirements of the labour market by involving IT associations, ICT employers, experts and EKA graduates in the evaluation and improvement of the study programme.
3. To develop collaboration with Latvian and foreign universities by developing joint English-language implementable, courses and guest lectures.
4. Regularly improve and refine the material and information base of the university, which ensures the acquisition of educational content corresponding to the needs of the modern labour market by purchasing modern application software and equipment.
5. Continue collaboration with professional organizations, incl. international organizations.
6. Continue collaboration with secondary schools, vocational secondary schools and professional secondary schools for attracting students to study in the direction programmes.
7. Continue to increase the international capacity of the direction programmes by attracting foreign students and lecturers.
8. To promote interdisciplinary collaboration between students of the study programme of the direction for the implementation of joint projects.
9. To promote the motivation of academic staff for continuous professional growth and improvement of study courses.
10. To improve the competences of lecturers in the management of research projects.

In Latvia, second-level professional bachelor's study programmes in the field of information technologies are accredited in several universities and universities, in comparison, did not include academic programmes. The study programme of the direction to be accredited has been compared with the study programmes in the following higher education institutions:

- University of Latvia (LU);
- Riga Technical University (RTU);
- University of Central Lancashire Cyprus (UCLan Cyprus);
- University of Ljubljana (UL).

All second-level professional bachelor's study programs of Latvian universities in the information technology sector included in the comparison are based on the professional standard "Programming engineer", and therefore cover a relatively equal set of acquired knowledge, skills and abilities. All programmes are created in accordance with the Cabinet of Ministers Regulation No. 512

"Regulations on the State Standard of Second Level Professional Higher Education", thus the total amount of each programme is 160 credit points.

The University of Latvia and RTU are the leading universities in the Republic of Latvia and both universities have a well-developed ICT direction and similar IT bachelor's programmes have been implemented, therefore the following universities have been chosen for comparison. Common is the degree to be awarded – Bachelor of Computer Science and qualification – Programming Engineer, the aim and results of the programme, the amount of credits and the duration of studies for a full-time group, while the forms of study, the study plan and the content of the courses differ.

For example, RTU and LU do not have available forms of distance and part-time studies, but EKA has all three forms of study (full-time, part-time extramural and distance learning) licenced, but until now the full-time form of study has not been implemented due to the lack of students. As a rule, EKA students are employed persons and therefore choose forms of part-time or distance learning. One has to study for 6 months longer than full-time students, but there is an opportunity to combine studies with work, because classes are held on Saturdays or remotely.

When it comes to the choice of study plans and courses, there is a lot in common, but nevertheless there are also differences.

For example, the first and second year courses offered by RTU are general education and are similar to many RTU programmes, but IT industry courses start only from the third year of study, while EKA's students begin to take specialized professional and theoretical courses in the IT industry (Programming, Database Technologies, WEB Programming, Software Engineering and others) starting with 1st semester; such planning provides an opportunity for students to understand whether they are ready to become programming specialists.

In addition, EKA offers its students more advanced courses in the field of IT, such as Artificial Intelligence, Development of mobile applications for Android and iOS platforms, in line with modern trends. The course programming languages is created based on today's requirements and the course content can be changed and improved depending on the requirements of employers.

When comparing EKA and LU programmes, the main difference is that 6 study sub-programmes are provided for in the bachelor's study programme of the University of Latvia: DZ - computer science, PI - software engineering, IT- information, IS - information systems, DI - computer engineering and DD - computer didactics. After the 3rd semester, students should choose one of the mentioned sub-programmes and continue their studies in the chosen sub-programme. The compulsory part of the study programme provides for the volume of courses 102CP plus 52 CP is an elective part depending on the sub-programme chosen by the student, the volume of free elective courses is 6CP, similar to EKA.

The form and scope of the internship also varies, EKA has three practices (familiarization, basic practice and programming), the total amount of CP is 26, and the LU has the only practice with a CP quantity of 18.

In all the three institutions, the final test is the development and defence of the bachelor's thesis, according to the Cabinet Regulation No.512 and the volume of the bachelor thesis is 12CP.

Central University of Lancashire (Cyprus), hereinafter referred to as UCLan and University of Ljubljana (Slovenia), hereinafter referred to as UL, have been selected for comparison with foreign universities. This choice has been justified on the basis of collaboration within the framework of the Erasmus programme and the mobility of EKA teaching staff, in addition to the IT study programmes offered by these universities, which are similar to EKA's IT programme.

For comparison with UCLan and UL, a full-time form of study for foreign flow students has been

chosen. The duration of the programme is equal to the programme offered by UCLan and is 4 years, while the duration of the UL programme is 3 years or six semesters. The UCLan study plan is compiled on a modular principle. Every year students acquire a course from 4 modules offered, the total number of credits of the programme is 260 ECTS. Similarly, the UL University programme has three sub-programmes – Software Engineering, Computer Game Development, and Computer Networks and Cybersecurity. Since the third year of study, students should choose their direction and take the course according to the chosen programme. Within the framework of the programme, the development of the project, the amount of 20 ECTS, is planned. The courses offered for learning are very similar to EKA in terms of the title and content, such as Higher Mathematics, Computer Systems Construction, WEB Technologies, Data Structures and Algorithms, Programming, Database Technologies, System Modelling, and others. In addition, UCLan offers its students the courses that have not yet been implemented at EKA, but may be included in the study plan in the future, these are the Basics of cloud technology and Basics of Agile project management.

Compared to the UL university, one can notice the same and different criteria, for example, the duration of the programme is 3 years and the volume of the study programme is 180 ECTS, while EKA has 4 years and 240 ECTS. The aim and results of the programme are similar to EKA, for example, graduates know and understand engineering principles, methods and regularities in the field of information technology, are able to solve technical problems and problems with software, are able to plan and ensure the operation of the company's information technology system and others. The theoretical and professional courses offered in the IT industry are similar to EKA. Another difference, despite the fact that the program is professional, the internship is not intended for students.

The competitiveness of the programme shall be ensured by:

- IT industry special courses Artificial Intelligence, Mobile application development for Android and iOS platform, as well as the course Programming Languages, which is the current programming language of the IT industry Python.
- The type of implementation of the study programme and the forms of study. The study programme has been implemented both in full-time studies and in part-time and distance learning.
- An effective system for the recognition of study results achieved in previous education or professional experience has been established, which allows students to start their studies in the later stages of studies. This opportunity is used annually by 26% of the enrolled students.
- Industry professionals are involved in the implementation of the programme.
- Students are provided with opportunities to engage in research and professional projects (for example, to report at conferences, to publish research results in the Collection of Student Articles, to participate in the project "Innovation Grants for Students MaKEIT")

**2.1.2. SWOT analysis of the study field with regard to the set aims by providing explanations on how the higher education institution/ college expects to eliminate/improve weaknesses, prevent threats, and avail themselves of the given opportunities, etc. The assessment of the plan for the development of the study field for the next six years and the procedure of the elaboration thereof. In case there is no development plan elaborated or the aims/ objectives are set for a shorter period of time, information on the elaboration of the plan for the development of the study field for the next assessment period shall be provided.**

In order to find out the possibilities of further development of the ICT study direction, the head of the direction together with the administration, the council of the study direction, the student council, employers and graduates annually conducts a SWOT analysis. The results of the SWOT analysis are presented in Table.

**Table.** ICT Direction SWOT Analysis

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Compliance of the study programme with Latvia's 2030 priorities</li> <li>• Implementation of the study programme in a foreign language</li> <li>• Different forms of study, incl. distance learning</li> <li>• Almost 50% of the teaching staff are professionals in the field</li> <li>• Digital solutions in the study process (Moodle, Video lecture system BBB)</li> <li>• Student conferences, guest lectures, etc.</li> <li>• EKA scientific publications</li> <li>• Study courses are offered as a microcredentials</li> <li>• Involvement of students in research</li> <li>• Sharing resources with other higher education institutions</li> <li>• Involvement of foreign teaching staff</li> <li>• Participation in the Erasmus exchange programme</li> <li>• A good system for recognizing the learning outcomes achieved in previous education and professional experience</li> </ul>	<ul style="list-style-type: none"> <li>• There is only one study programme in the study direction</li> <li>• Small number of students studying full-time</li> <li>• There is insufficient recognition of EKA and the direction of study on the international scale</li> <li>• Insufficient motivation of students to participate in extra-curricular and research activities</li> <li>• Insufficient collaboration with local universities</li> <li>• Insufficient collaboration with foreign universities</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Partner network expansion</li> <li>• Increasing the number of students</li> <li>• A new study programme development</li> <li>• Strengthening scientific and international capacity</li> <li>• The further development of distance learning</li> <li>• Continuing education and professional development of teachers, motivating to study in doctoral studies and obtain doctoral degrees</li> <li>• Creation of a digital library with industry literature in foreign languages</li> <li>• Attraction of international funding for the development of the study direction</li> <li>• Promoting recognition of the university and the study programme</li> </ul>	<ul style="list-style-type: none"> <li>• Competition (both in the education services market and in the resource market)</li> <li>• Demography</li> <li>• Changes in laws and regulations</li> <li>• Decline in the prestige of local higher education among potential applicants</li> <li>• Free education abroad</li> <li>• Social and economic situation in Latvia and abroad</li> <li>• Low prestige of an academic career</li> </ul>

From the SWOT analysis, it can be concluded that the study direction has a strong basis for development and improvement, since the number of criteria of strengths and opportunities is bigger than the number of weaknesses and threats.

In order to mitigate the impact of weak party factors on the implementation and development of the study direction, different solutions and options are proposed (e.g.):

- There is only one study programme in the field of study – at the moment there are no plans to take out additional study programmes, but in order to reduce the impact of these factors, a programme for English-speaking students has been created.
- A small number of students in full-time studies – for the development and improvement of programmes for foreign students, the attraction of students takes place from different regions of the world incl. Asia, Africa. Statistics show that the number of students enrolled increases every year.
- There is not enough recognition of EKA and the field of study on the international stage – in order to reduce the impact of this factor, every year EKA organizes an international conference ETECH, which has also an IT section. Within the framework of the Erasmus project, lecturers of the ICT direction organize and conduct guest lectures and presentations at EU universities. ICT lecturers write and publish articles in WOS and Scopus database repositories.
- Insufficient motivation of students to participate in extra-curricular and research activities – every semester there is a meeting organized and led by the director of the study programme, the aim of which is to motivate students to participate in an annual student conference, EU projects (MAKE IT), as well as other IT activities and events organized by EKA or collaboration partners, for example, to pass the course Project work, students must attend one guest lecture and IT seminar or a workshop in the field of IT.
- Insufficient collaboration with local universities – every year new opportunities for collaboration with local universities are sought, for example, the implementation of the MAKE IT project was launched together with the BA School of Business and Finance (BASBF), within the framework of which networking events and a hackathon were organized. There is an agreement with the Transport and Telecommunication Institute (TSI) on conducting joint lectures, planning to implement it in 2022/2023 study year in the spring semester, the implementation of joint IT projects is under discussion.
- Insufficient collaboration with foreign universities – during the reporting period, guest lectures were organized, conducted by a professor from Germany. In 2022/2023, 4 students from Cyprus came to EKA under the Erasmus programme, and it is planned to continue collaboration in the spring semester. On the other hand, EKA's foreign students regularly take advantage of Erasmus project opportunities and take advantage of various IT courses at EU universities, mainly in Germany and Estonia.

To reduce the impact of threat factor risks on the implementation and development of the study direction, various solutions and options are offered (some examples below):

- Competition (both in the education services market and in the resource market) – despite the fact that this risk exists, statistical data show that the demand for ICT specialists in Latvia is greater than the supply. In the ICT direction, the content of the study programme and course descriptions are supplemented and updated every year in order to follow the trends of the ICT industry and prepare competitive specialists.
- Demographics – in order to reduce this risk, the implementation of the study programme in English has been started.
- Changes in regulatory enactments – EKA management follows all changes that occur in the regulations of the Ministry of Education or the Cabinet of Ministers to inform the academic

staff of the ICT direction, the programme director, teaching staff, methodologists in a timely manner. During the reporting period, a new position of a quality manager has appeared, whose duty is to follow all changes in regulatory enactments and laws.

- Social and economic situation in Latvia and abroad - the influence of this factor is the greatest on the development of the ICT direction, but the remuneration of specialists in the ICT sector is much higher than in other sectors and professions, therefore it provides a larger number of students, because after graduation they have the opportunity to find a job with a high level of remuneration. For its part, EKA offers students to participate in international projects where students are paid a scholarship, such as MAKE IT.
- The low prestige of an academic career - EKA provides teaching staff of the ICT direction with free participation in conferences, payment for Erasmus mobility, scientific articles and publications, the opportunity to participate in projects, etc., which allows not only to transfer professional experience and knowledge to students, but also to realize themselves in research and international projects.

**Taking into account the assessment of the strengths and weaknesses of the study direction, the priority development directions of the study direction for the next period are determined and development plan is prepared:**

- Increasing the professionalism of the study direction programme - improvement of the content of study courses in accordance with modern IT theoretical framework, IT field development trends and market requirements;
- Compliance with the requirements of the labour market when defining the study results of the study programme and creating the content of study courses;
- Attracting professional guest lecturers;
- Participation of teaching staff in international exchange programmes;
- Participation of teaching staff in international projects in the ICT sector.
- Participation of teaching staff in scientific conferences and writing publications;
- Collaboration with professional associations.
- Development of collaboration with higher education institutions and universities of Latvia.
- Organization of guest lectures in collaboration with lecturers of Latvian and European higher education institutions.
- Using the opportunities of the ERASMUS+ programme in the direction of ICT for Latvian and international students.
- Participation with employers and entrepreneurs in the realization of studies: lectures, internships, supervision of bachelor theses and defence commissions
- Involvement of students in conducting of scientific research, participation in research projects and development of new research projects, as well as motivation of students to participate in scientific conferences in the field.
- Search and attraction of new elected lecturers for the implementation of the IT programme.

**2.1.3. The structure of the management of the study field and the relevant study programmes, and the analysis and assessment of the efficiency thereof, including the assessment of the role of the head of the study field and the heads of the study programmes, their responsibilities, and the cooperation with other heads of the study programmes, as well as the assessment of the support by the administrative and technical staff of the higher education institution/ college provided within the study field.**

The administration of the Higher Education Institution, teaching staff, student council, students, employers, graduates and others are involved in the management of the study direction.

The study results are regularly analysed and, based on the results of the analysis, the necessary improvement measures are taken, which affect both the direction as a whole and the study programme in the study direction separately. The results of research and artistic creation activities are also analysed. In the process of development and improvement of the study direction and the programme, the activities of the Study Council are of fundamental importance.

### **The main management functions of the study direction**

- The Senate approves the documentation necessary to manage the process and proposes the necessary changes.
- The Rector is responsible for strategic planning, control over the implementation of tasks and preparation and approval of the budget.
- The Vice-Rector for Study and Development is responsible for the supervision and quality assurance of the study process. The Vice-Rector for Study and Development manages and develops the study directions and programmes of the Higher Education Institution, organises the creation of new directions and programmes, organises the internal and external assessment of the quality of studies, as well as supervises and coordinates the implementation and improvement of study programmes.
- The Vice-Rector for Science and International Relations shall be responsible for the supervision and quality assurance of research and artistic creation activities. The Vice-Rector for Science and International Relations develops the Strategy for the Development of Scientific and Creative Activity and the Action Plan of this Strategy and is responsible for achieving the objectives of this Strategy. Vice-Rector supports for academic staff by organizing scientific seminars and providing information about scientific conferences, publishing opportunities etc.
- The Quality Manager shall be responsible for ensuring the operation of the quality management system. The Quality Manager carries out the assessment of the quality system, organizes the assessment process of the personnel involved in the study direction, organizes annual surveys of personnel, students and employers, analyses and evaluates their results and provides a report to the Rector. The Quality manager informs academic staff and supports in study course improvement, provide recommendations (after survey) about necessary improvements for head of study direction and study programme director etc.
- The Study Council performs analysis of the study process and develops recommendations for the improvement and development of the study direction and study process. The functions of the Study Council shall be determined by the Regulation of the Study Council of the EKA University of Applied Sciences.
- The head of the study direction is responsible for the management and development of the study direction, who organises, supervises and evaluates the work of the personnel involved in the study direction and its results. The head of the study direction shall analyse and evaluate the study process and its results, propose the establishment of new study programmes and the closure of non-current study programmes, set new tasks, inform the Vice-Rector for Studies and lecturers thereof, and provide proposals to the management of the Higher Education Institution for the improvement of the study direction. Collaboration with the directors of the direction study programmes carries out an annual assessment of the study direction, organizes the elimination of detected deficiencies and the implementation of improvement measures. The head of the study direction shall ensure collaboration between the parties involved in the implementation of the study direction.
- The director of the study programme shall be responsible for the development,

implementation and management of the study programme in accordance with the requirements of the specific field of science, sub-field and profession standard, updating and improvement of the study programme. The director of the study programme shall analyse and evaluate the study programme and its results, inform the head of the study direction and lecturers thereof, and provide proposals for the improvement of the study programme. The director of the study programme shall act in the study Council of the relevant direction. The director of the study programme shall carry out his or her activities under the supervision of the head of the study direction. The director of the study programme in collaboration with the head of the direction carries out the planning of the academic staff, with appropriate competence.

- Professors of a higher education institution, in accordance with Section 28, Paragraph 4, p.4 of the Law on Higher Education Institutions determined, participates in the evaluation of the work and quality of study programmes, the Higher Education Institution and its structural units.

The general staff involved in the study direction provide support for academic staff and students within their responsibility area. For example, study programme methodologist prepare information about students, their grades, study plans, list of students, protocols for exams etc. Student information center informs students about study process, main activities, prepares lecture schedule and schedule for consultations etc. Erasmus coordinator informs students and staff about mobilities and assists in preparation of documents. E-coordinator assists in e-course development in the Moodle, organizes trainings and prepares manuals for users of Moodle and videoconference system. Librarian assists students and staff in selection of necessary bibliographic sources and provide new literature according to academic staff requirement.

Each member of staff supports students and academic staff for qualitative study process.

**2.1.4. Description and assessment of the requirements and the system for the admission of students by specifying, inter alia, the regulatory framework of the admission procedures and requirements. The assessment of options for the students to have their study period, professional experience, and the previously acquired formal and non-formal education recognised within the study field by providing specific examples of the application of these procedures.**

The requirements for the admission of students are determined taking into account the requirements of regulatory enactments, as well as the specifics of study programmes. Admission rules are clarified and agreed upon by the EKA Senate. After approval, the rules are published on the website of the university.

Admission of Latvian-flow students to undergraduate studies takes place using both the Unified Admission System on the portal Latvija.lv, as well as providing an opportunity to apply in person on the premises of the university. Part-time students and distance education students can also apply for studies remotely using the university's electronic application system. The list of necessary documents, the opening hours of the admission committee and contact information are published on the website of the university in the section "For future students".

Admission of foreign students is carried out twice a year: in the autumn and spring semesters. The admission process consists of the following, several stages:

- Submission and verification of documents (compliance of previous education, the presence of all the necessary documents);
- Prerequisite and language test: the applicant must complete a test that includes questions about both the specifics of the programme and general questions oriented towards the language proficiency test;
- The aim of the interview is to find out the motivation of the applicant for studying and the level of knowledge of foreign languages.

The documents of applicants who have successfully passed the test and interview are directed to the completion of entry documents.

Such selection of students facilitates the admission of students whose level of preparedness allows them to successfully complete the study programme.

For later stages, students are admitted twice a year - in summer and winter. The list of documents to be submitted is available on the university's website in the section "For prospective students". After submitting the documents, the director of the relevant programme examines the documents certifying the results of studies achieved in previous education or professional experience. In accordance with the [Regulation on recognition of study results achieved in previous education or professional experience](#), the programme director shall prepare a protocol for the recognition of study results and an individual study plan, submitting them for examination to the Commission for the Recognition of Study Results. When examining the documents, the Commission decides on how many credits may have been recognised, whether additional tests should be taken and in which semester the student can be credited. After the commission meeting, all documents are handed over to the Student Information Centre, where the educational methodologist acquaints the student with the protocol for the recognition of study results, the individual study plan and the decision of the commission. After getting acquainted with the above documents, the student may sign the study agreement if s/ he agrees with the decision of the commission. In case the student does not agree with the decision of the commission, then s/ he has the right to contest it within 10 days by submitting an application to the Rector.

The student's previous professional experience can be used to recognize the internship, for example, work in the IT industry as a programmer or other IT specialist. The recognition procedure consists of four stages:

1. The student submits all the necessary documents for recognition (application, job description, employment contract and others) to the programme director for examination
2. The Programme Director shall examine the documents and, if they correspond, send them to the Rector and the recognition Commission for evaluation.
3. After accepting the documents, the programme director organizes the defence procedure, to which the student must prepare a presentation corresponding to the requirements of the course and defend it in the presence of the commission.
4. After the defence, the signed protocol is submitted by the programme director to the programme educational methodologist and on that basis the course will be recognized and the data added to the student's study card.

**Table.** Dynamics of the number of students in later stages of studies

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Study programme	"Information technology"
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Year of study	Full-time	Part-time	Distance learning
2017/ 2018		6	1
2018/ 2019		3	5
2019/ 2020		3	3
2020/ 2021		2	6
2021/ 2022		1	3
2022/ 2023	2	3	4

Most often, for later stages, college graduates who graduated from first-level higher vocational education programmes in the amount of 80 credit points are admitted. After recognition of the study results, students are enrolled in the 2nd or 3rd year, depending on the content of the study programme.

#### **2.1.5. Assessment of the methods and procedures for the evaluation of students' achievements, as well as the principles of their selection and the analysis of the compliance of the evaluation methods and procedures with the aims of the study programmes and the needs of the students.**

The basic principles of assessment are laid down in the [Study Regulations](#) and are based on the expected study results in each study programme. The teaching staff is entitled to choose test methods, taking into account the specifics of the study course, the level of preparedness of students and other factors. Students' knowledge is assessed both in the final examinations of study courses and in the intermediate examinations of study courses. EKA has a certain number of intermediate tests, which depends on the length of the study course in credit points. Students are offered various types of tests: written (essays, tests, quizzes, etc.), oral (seminars, presentations, discussions, etc.), project work, group work, participation in competitions and conferences, etc. The types and number of examinations are specified in the study course descriptions. If the student has not fulfilled the requirements for the acquisition of the study course, the teaching staff has the right not to allow students to take the final examination in the study course. The principles for the assessment of the study results achieved by students are specified in the description of each study course. Study course descriptions are available in EKA's e-environment.

If a student encounters difficulties with the fulfilment of the requirements of the study course, as well as due to illness and other justifiable reasons, he or she has the opportunity to use consultations with the teaching staff and take intermediate and final examinations individually. The Student Guide (available on the EKA website) also provides information on the student's actions in case of academic debts.

Research papers and internship reports are evaluated with the participation of at least two lecturers in the defence commission. The Commission evaluates both the content of the work, the student's presentation skills, as well as the ability to reasonably discuss and answer questions.

Final (bachelor) papers (theses) are evaluated after students defending them at a meeting of the State Examination Commission. The principles for the formation of the Commission, as well as the procedures for the development and evaluation of final theses are laid down in the [EKA Regulations on the Development and Defence of Studies and Projects Papers and Final Thesis](#). The evaluation results show how goal of the study programme is achieved: is student got knowledge, skills and competences in programming. Students choose topic of the thesis according their interests and needs. During this process advisor is appointed for each student, which assists him in preparation of thesis in line of EKA requirements and topicality in industry.

The assessment of distance students takes place on Moodle and the Video Conferencing System Big Blue Button, using similar principles and criteria as for part-time in-person students. The teaching staff places the requirements for the acquisition of the study course, independent work and other information necessary for the acquisition of the course on the e-course Moodle. Students submit their papers onto Moodle, as well as participate in seminars, practical classes and online discussions using the EKA Video Lecture System.

#### **2.1.6. Description and assessment of the academic integrity principles, the mechanisms for compliance with these principles, and the way in which the stakeholders are informed. Specify the plagiarism detection tools used by providing examples of the use of these tools and mechanisms.**

The principles of academic honesty are defined in the EKA's Code of Ethics and Academic Integrity. This document prescribes action if a violation of academic integrity and ethics has been established.

Students are informed about the content of the Code and the principles of academic integrity at the beginning of studies, as well as in consultations on the preparation of study and project papers, internship reports and final theses.

The teaching staff is informed about the principles of academic integrity at EKA's general meetings and professional development events (seminars and methodological conferences), as well as when starting work at the university.

[EKA's Code of Ethics and Academic Integrity](#) is available for students in the Student Guide, while for employees - in the e-environment, in the course "EKA Administration".

EKA uses anti-plagiarism tools, examining all final theses and scientific papers submitted for publication in EKA's scientific journals. EKA uses the Unified Computerized Plagiarism Control System for checking papers, which is mutual to several Latvian higher education institutions. Study and project papers are checked in case when the teaching staff suspects possible plagiarism.

Until now, no serious violations of the code in the activities of students were found. This shows a sufficiently good awareness of compliance with the Code. The main steps that should be taken in case of detection of plagiarism are stipulated in the Code.

## **2.2. Efficiency of the Internal Quality Assurance System**

### **2.2.1. Assessment of the efficiency of the internal quality assurance system within the study field by specifying the measures undertaken to achieve the aims and outcomes of the study programmes and to ensure continuous improvement, development, and efficient performance of the study field and the relevant study programmes.**

EKA has established and operates an internal quality assurance system in accordance with EKA's quality policy (approved on 16 February 2022 at the EKA Senate meeting, protocol No. 168) and is described in the EKA's quality management system manual (available on EKA's website "EKA Administration").

The description of the quality assurance of studies determines the management of the study direction with the aim of ensuring efficiency and quality. It defines the areas of responsibility. The management of the study direction is organized in order to more effectively achieve the strategic goals of EKA's. The quality of studies is ensured within the framework of the study direction. Management processes are identified to ensure the quality of the study direction. EKA administration, lecturers, student council, students, employers and alumni are involved in the management of the direction (see p. 2.1.3.). The study results are regularly analysed by the Study Council and, based on the results of the analysis, the necessary improvement measures are taken.

To ensure the quality of the direction, the following actions are performed:

- The Vice-Rector for Study and Development is responsible for the supervision and quality assurance of the study process. She organizes internal and external assessment of the quality of studies, as well as supervises and coordinates the implementation and improvement of study programmes.
- The Quality Manager shall be responsible for ensuring the operation of the quality management system. The Quality Manager carries out the assessment of the quality system, organizes the assessment process of the personnel involved in the study direction, organizes annual surveys of personnel, students and employers, analyses and evaluates their results and provides a report to the Rector.
- The Study Council performs analysis of the study process and develops recommendations for the improvement and development of the study direction and study process. The functions of the Study Council shall be determined by the Regulation of the Study Council of the EKA University of Applied Sciences. For example, at the end of each academic year, council members carry out an assessment of the strengths and weaknesses of the study direction, analyse the results of the survey of students and graduates. During the reporting years, on the basis of this evaluation, changes have been made to the content of the programme, supplementing it, for example, with study courses in which additional programming languages are taught.
- The head of the study direction is responsible for the management and development of the study direction, who organises, supervises and evaluates the work of the personnel involved in the study direction and its results. The head of the study direction analyses and evaluates the study process and its results, sets new tasks, informs the Vice-Rector for Study and Development and teaching staff thereof, and provides proposals to EKA management for the improvement of the study direction. The head of the direction shall carry out an annual assessment of the study direction, organise the elimination of the detected deficiencies, the implementation of improvement measures and ensure collaboration between all the parties involved in the implementation of the study direction.

In order to assess the quality of the study process and provide opportunities for improvement:

- every year student surveys are conducted on the quality of the study process;
- at the end of each semester, a survey of students is conducted on the quality of the work of the teaching staff;
- after each graduation, graduates are surveyed to evaluate EKA's performance and understand the areas to be improved;
- employers are regularly surveyed to find out the direction of programme development and student performance in internships.
- representatives of the industry, who participate in the defence of the bachelor theses, express their opinion on the achievements of students and offer opportunities for the development of the programme.
- within the framework of the project "Innovation grants for students in the interdisciplinary fields of art, culture, economics and IT (MaKE IT)", a strategic collaboration has been established for the study direction with the association LATA - Latvian Open Technology Association in order to develop students' research capacities and help to realize innovative/interdisciplinary ideas.

The obtained information is analysed at the administration meeting and the study council and decisions are made to improve the situation. Based on the results of the surveys and recommendations of industry representatives, decisions have been made to improve the study process (see point 2.2.2).

EKA internal quality assurance system is effective and provides improvement of study direction, incl. solving problems.

**2.2.2. Analysis and assessment of the system and the procedures for the development and review of the study programmes by providing specific examples of the review of the study programmes, the aims, and regularity, as well as the stakeholders and their responsibilities. If, during the reporting period, new study programmes have been developed within the study field, describe the procedures of their development (including the process of the approval of study programmes).**

The development and approval of study programmes is organised in accordance with the procedures for the development, approval and updating of study programmes (EKA website Moodle "EKA Administration", login is available in Annex 1). This procedure determines in detail the process of developing, updating and closing study programmes and the responsible staff involved in this process

In accordance with the requirements of point 55 of the Law on Higher Education Institutions, the Regulation on the preparation, updating and approval of the description of the study content and implementation has been developed and implemented (approved at the meeting of the EKA Senate on 26.04.2017. Protocol No. 120, available on EKA's website "EKA Administration").

Changes in the direction of study and programmes are made on the basis of annual self-assessment, visit results, evaluating the submitted proposals from teaching staff, students, graduates and employers, as well as taking into account changes in regulatory enactments. In order to find out the opinion and recommendations of students, graduates and industry representatives, surveys are regularly organized, which are determined by the survey procedure in the description of the EKA's Quality Management System (available on the EKA website "EKA Administration"). The surveys, based on the recommendations, identify areas for improvement of study programmes.

### Some examples:

After evaluating the results of the student and graduate surveys and the opinion of industry representatives in 2021, the following changes have been made:

- a new study course "Programming Languages" has been created. as part of the course, the basics of the modern current programming language will be taught, currently it is the Python programming language. in the future, it is possible to change the course content without changing the course name;
- the study course "Higher Mathematics" is supplemented with topics that will help students calculate tasks for the course "Artificial Intelligence". The basics of the Python programming language make it easier and more convenient for students to calculate tasks for the course "Artificial Intelligence";
- discussions with management have taken place about the possibility of moving from an existing version of Microsoft office to Microsoft Office 365; the process has begun, and the transition from IMAP e-mail server to Microsoft Exchange has now been provided;
- At the regular annual meeting of the Study Council, a decision has been made on the process of implementing, concluding, studying and developing additional IT research methods.
- In collaboration with the company "Like a Coffee", in the 2021 academic year, a guest lecture was organized for students on the topic Javascript frameworks (Angular, Vue, React) use in the course WEB Programming.

In the direction to be accredited, new study programmes have not been licensed.

### **2.2.3. Description of the procedures and/or systems according to which the students are expected to submit complaints and proposals (except for the surveys to be conducted among the students). Specify whether and how the students have access to the information on the possibilities to submit complaints and proposals and how the outcomes of the examination of the complaints and proposals and the improvements of the study field and the relevant study programmes are communicated by providing the respective examples.**

In order to ensure compliance with ESG requirements and implement EKA's quality policy, EKA has developed a procedure for submitting complaints and proposals and it is included in the Study Regulations. The Regulation is available on the EKA website, Student's Guide) as the procedure for submitting and reviewing applications. The procedure determines the procedure by which students may submit applications and the procedure and deadlines for their examination. The procedure is designed to have the opportunity to quickly obtain feedback from students in current situations, without waiting for another survey.

Students submit their applications to the Study Information Centre (SIC), where they are registered and further addressed to the responsible persons or structural units. The responsible person shall organise the investigation of the situation referred to in the submission and conduct the necessary negotiations with the involved parties. The responsible person shall provide written or oral information to the students who have submitted the application within one month. Submissions are recorded and results are compiled.

During students survey students can submit recommendation anonymous. But complaints cannot be submitted anonymous, because EKA staff needs to know situation for analysis and better solution for

student.

With regard to the bachelor theses, the right of students to submit an appeal and the procedures for the examination thereof shall be determined by the Regulation on final examinations and State examinations at the EKA University of Applied Sciences (approved at the meeting of the EKA Senate on 01.12.2011. Protocol No. 77, The Regulations are available on the EKA website, Student Guide). Appeals are considered and decided by the Vice-Rector for Study and Development.

**2.2.4. Provide information on the mechanism for collecting the statistical data, as developed by the higher education institution/ college. Specify the type of data to be collected, the regularity of collection, and the way the information is used to improve the study field. Describe the mechanism for obtaining and providing feedback, including with regard to the work with the students, graduates, and employers.**

One of the principles established by EKA's quality policy is fact-based decision-making. In order to implement this principle and obtain facts about the study process and its results, EKA regularly collects information on:

- student enrolment results once a year through the collection of information and its analysis in the EKA yearbook, staff meeting and board meeting.
- students' success once a semester by collecting information and reviewing it at an administration meeting and the Study Council.
- the reasons for drop-out once a semester, collecting information and analysing the reasons for the refusal from studies indicated by students. Information is analysed by the Vice-Rector for Study and Development.
- mobility indicators for students and teachers once a year. The information is analysed and the results reviewed by the Vice-Rector for Science and International Relations;
- assessment of the quality of the work of the teaching staff by students once a year by conducting a survey. The results of the surveys are collected, analysed and published;
- assessment of the quality of the work of the teaching staff by students once a year by conducting a survey. The results of the surveys are collected, analysed and published;
- satisfaction of graduates with the achieved study results twice a year by conducting a survey. The results of the surveys are collected, analysed and published;
- employment of graduates (once a year for graduates of the last year, for the rest - once every three years);
- quantitative and qualitative results of students' scientific and creative activities once a year, performing a summary of results and analysis of achievements in accordance with the planned;
- the quantitative and qualitative results of the scientific and creative activities of the teaching staff once a year, carrying out an assessment of the collection of information.

In total, the main priority of EKA's development strategy, "Supply and content of higher education", identifies 35 measurable criteria that are regularly measured. The results are analysed by conducting an analysis of the achievement of strategic goals and the implementation of action plans, as well as conducting an annual self-assessment. The results achieved by EKA are included in the EKA yearbook, input and stored in EKA's internal IT system Nexus. The results of the student and graduate surveys are published on the EKA website, Student Guide. The results of the surveys were discussed at the administration meeting, the Study Council meeting and the Year-end

meeting. Regular reports of the study direction are published on the EKA website in the section Self-assessment reports of study directions. Information about graduates is accumulated by the head of the direction and s/ he involves them in the development of the programme. The main procedures for the improvement cycle are described in the EKA's Quality System Manual. The evaluation of staff is carried out in accordance with the EKA staff performance assessment procedure (available on EKA's website, EKA Administration).

The results are analysed by conducting an analysis of the achievement of strategic goals and the implementation of action plans, as well as conducting an annual self-assessment. Some examples:

- Based on the results of the assessment of the teaching staff, the programme director conducts an analysis of the quality of the teaching staff. If there are significant shortcomings, then discussions are held with the teaching staff about possible solutions to eliminate the shortcomings. During the reporting year, discussions were held with some lecturers about the quality of the information posted in the e-course.
- Based on the assessment results of the quality of the study process, EKA improves or includes additional activities in the development plan, related to the organisation of the study process, material and technical provision, informative provision, etc. For example: each year, before the start of the autumn semester, the ICT direction sends the programme director a list of software that needs to be installed to take the courses prescribed in computer classes, as well as a list of equipment for performing laboratory work or a list of textbooks. Every year, a methodological conference is organized, which provides an opportunity to improve and develop the content of the study course and the methods used for the acquisition of the courses.
- Analysis of quantitative and qualitative results of scientific and creative activity allows to evaluate the involvement of the direction and its study programmes, students and teaching staff in scientific and creative activities. If necessary, additional activities are developed to promote scientific and creative activity in the study direction, for example: The teaching staff and students of the ICT direction participated in the implementation of the MAKEIT project. For the successful acquisition of the course Project work, students must participate in an IT seminar or workshop and attend at least one guest lecture organized by EKA or university collaboration partners. During the defence, students must present a certificate or proof of participation.

**2.2.5. Specify the websites (e.g., the homepage) on which the information on the study field and the relevant study programmes is published (in all languages in which the study programmes are implemented) by indicating the persons responsible for the compliance of the information available on the website with the information published in the official registers (State Education Information System (VIIS), E-platform).**

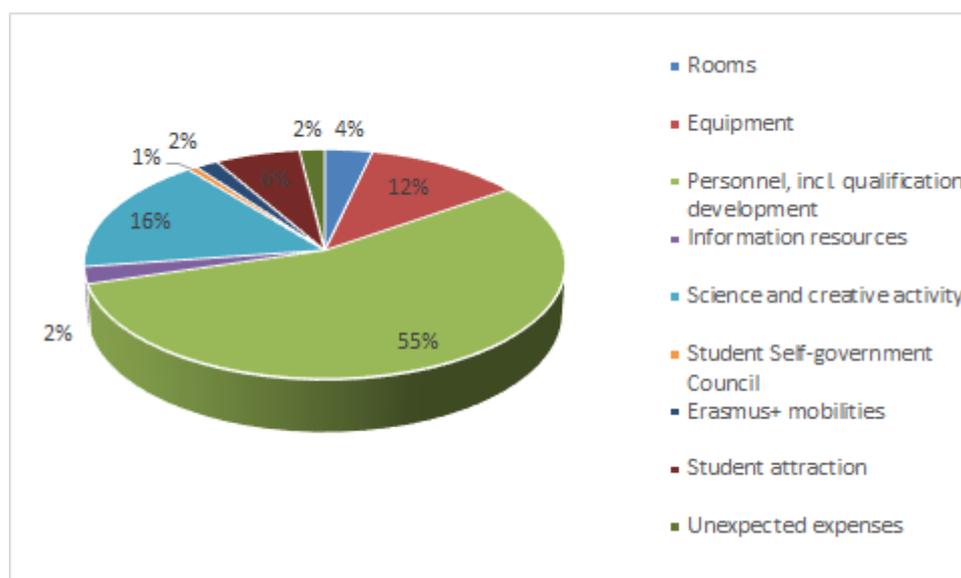
All the necessary information about the study direction and study programme is available on the EKA website [www.augstskola.lv](http://www.augstskola.lv). Information about the study programme is presented in the section "Study programmes", in this section one can find information about the aims and objectives of the programme, the order of admission, study fees, leading teaching staff and study courses and results.

Information is available in both Latvian and English. The EKA Communication Project Manager is responsible for updating and improving the information.

## 2.3. Resources and Provision of the Study Field

**2.3.1. Provide information on the system developed by the higher education institution/ college for determining and redistribution of the financial resources required for the implementation of the study field and the relevant study programmes. Provide data on the available funding for the scientific research and/or artistic creation activities, its sources and its use for the development of the study field.**

The budget of the study field and programmes consists of tuition fees and external financing (project financing). The share of external financing in the budget, which consists of EU structural funds and international projects, is 29%. Revenues from the implementation of all study programmes are used in solidarity to finance the costs of the academic, scientific and administrative process of the entire university. According to the approved budget, the division of costs by their main types is carried out. Currently, each study direction provides sufficient revenue and attraction of external financing, so that the implementation of the direction is ensured and profitability is determined.



**Figure.** Distribution of funding for the implementation of the study direction

The funding for science and creative activity consists of the resources of the higher education institution and external funding (incl. project funding), its share in the total budget of the study direction is 16%. These financial resources have been used to support teaching staff and students in research and creative work, as well as for the implementation of the project.

**2.3.2. Provide information on the infrastructure and the material and technical provisions required for the implementation of the study field and the relevant study programmes. Specify whether the required provision is available to the higher education institution/ college, available to the students, and the teaching staff.**

For the implementation of the study direction, both specialized premises and common areas (classrooms that are also used for the implementation of other directions) are available.

Specialized rooms for the study direction needs:

- Digital laboratory. Computer systems with MacOS (operating system) are available in the room, with the provision of a special software for the implementation of the course "Development of mobile application";
- Computer classes in which the software "Virtual Box" is available; with the help of this software, students have the opportunity to simultaneously use different operating systems on one computer; network equipment and peripherals for the implementation of laboratory work are available.

Common areas consist of:

- Eighteen lecture-rooms;
- Digital design laboratory;
- Photo and video content creation laboratory;
- Business incubator room;
- Cafe;
- Recreation corners for students;
- Lecturers' room;
- Library and Creative hall;
- Administration rooms.

Wi-Fi is available throughout the university. All lecture-rooms have access to the material and technical equipment necessary for conducting classes, incl. computer, projector, etc.

For the needs of the study process, an e-environment is available: EKA website, EKA application (available for download on the AppStore and Play Market) , Moodle and BigBlue Button, E-Nexus. The EKA Website contains information on the organisation of the study process, a list of classes, announcements, a book catalogue, etc. The EKA app is available to students to access their class schedule, announcements, and their study and financial data more quickly.

The Nexus database is used to record student information. It contains students' personal information, study plans, achievements, orders, etc.

**2.3.3. Provide information on the system and procedures for the improvement and purchase of the methodological and informative provision. Description and assessment of the availability of the library and the databases to the students (including in digital environment) and their compliance with the needs of the study field by specifying whether the opening times of the library are appropriate for the students, as well as the number/ area of the premises, their suitability for individual studies and research work, the services provided by the library, the available literature for the implementation of the study field, the databases available for the students in the respective field, the statistical data on their use, the procedures for the replenishment of the library stock, as well as the procedures and possibilities for the subscription to the databases.**

Students have access to the EKA library, as well as all students are informed about the possibilities of using the National Library of Latvia, incl. remotely. The director of the study programme

introduces students to the library, book catalogue and possibilities of using the e-environment of the university within the framework of the study course "Introduction to Studies". The EKA Library works five days a week (including Saturday with prolonged opening hours). Working hours are planned taking into account student attendance and demand (according to survey data and individual requests). Since 2013 the EKA library is a member of the Latvian Academic Library Association (LATABA).

The catalogue of books available in the EKA Library and other libraries is available electronically [here](#). There are 318 books titles are available (136 in Latvian, 182 in English; 578 copies) for students in study direction. Students are informed about opportunity to use other libraries, inc. Latvian National Library (incl. databases usage opportunities).

The library's collection fund is replenished in two ways:

- The librarian follows the news and informs the programme director about it. The programme director assesses the necessity of purchasing the latest editions in consultation with the teaching staff of the relevant study courses. If the teaching staff recognizes the publication as useful for completing the study course, then the programme director informs the librarian of the need to purchase it;
- The teaching staff regularly reviews the content of the study courses, incl. topicality of bibliographic sources necessary for the acquisition of the course. If the list of obligatory literature is replenished with newer sources that are not in the library, then the teaching staff must inform the librarian about the need to purchase them. The librarian evaluates the cost of purchasing the book and the options for purchasing it. If the cost of the book does not exceed the specified amount, then the book is purchased. Otherwise, solutions are sought: replacing the source with an alternative edition with similar content, purchasing a second-hand edition, etc.

The collections of the EKA library are replenished only with the latest literature, which is no older than 5 years.

Funding to replenish the stocks is planned from EKA's annual budget, which amounts to 2-3% a year, depending on the depreciation of books and the demand of the teaching staff for the latest literature.

Students can borrow books using a subscription, as well as work with information sources in the reading room. Twenty computers with internet access are available in the library's reading room. The following services are available in the library:

- Assistance in finding bibliographic sources;
- Photocopying;
- Printing;
- Scanning;
- Binding of works.

Several databases are available for students and teaching staff, a list of them is available [here](#). Subscription to databases is carried out on the recommendation of the teaching staff and within the framework of possible financial opportunities.

**Table.** Statistics about usage of data bases

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Institution Name: LATVIAN CONSORTIUM CULTURE INFORMATION SYSTEMS CENTRE

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Reporting Period: 2021-01-11 to 2022-10-31

Customer	Database Sessions	Total Searches	Total Full-Text Requests	Abstract Requests
EKA University of Applied Sciences	4384	15819	1915	2334

The teaching staff places the materials of the study course, as well as the description of the study course, the requirements for the acquisition of the course, descriptions of independent work in the e-environment of the university on Moodle. Sample topics of study papers, internship tasks, sample topics of the bachelor thesis and other information necessary for studies are also available.

In the library, students have access to samples of study and project papers and bachelor theses: both in paper form and electronically in [the catalogue of student works](#). Posting of works in the catalogue of student works takes place with the consent of the student (the student confirms in writing that the work does not contain confidential information and it is allowed to publish it).

**2.3.4. Provide a description and assessment of information and communication technology solutions used in the study process (e.g., MOODLE). If the study programmes within the study field are implemented in distance learning, the tools specially adapted for this form of study must also be indicated.**

EKA has a developed digital learning environment that includes Moodle, the Video Conferencing System Big Blue Button (BBB) and the information posted on the website: Student's Guide (available on EKA website, login is available in Annex 1), Class Schedule, and The Student's Personal Section, which presents his/her study information.

Moodle is used as a website where study course materials, tasks for independent work, various information resources, etc. are available. Big Blue Button (BBB) is a video conferencing system used to deliver video lectures online.

Both Moodle and BBB have been used to organize the distance learning study process. As mentioned above, Moodle has access to study materials, assignments, tests, and other information necessary for studies. Evaluations of independent works performed are also available there.

BBB allows to conduct lectures, seminars and practical classes online. This ICT solution provides the teaching staff with opportunities to organize work in groups (using the "Breakout rooms" function), discussions, showcase various visual materials, including those from websites, as well as to collaborate using the built-in collaborative whiteboard. If necessary, the teaching staff can hold tests online using the "Poll" function, which allows you to see each student's answers to the questions.

The teaching staff also uses other digital tools (both in full-time and part-time and distance learning) in the study process, which allows them to use design thinking and problem-solving methods, such as Mural, Miro, Trello, Kahhot, ITPoker, Menti, etc. In some cases, Discord has been used to exchange information.

Each study programme also has a forum on Moodle (available to all students), where the programme director posts current information. Consultations are available in each study course both in person and remotely.

**2.3.5. Provide information on the procedures for attracting and/or employing the teaching staff (including the call for vacancies, employment, election procedure, etc.), and the assessment of their transparency.**

EKA employs elected lecturers and guest lecturers. An open competition is advertised for attracting teachers: for elected academic positions – in the official publisher “Latvijas Vestnesis”, for guest teachers – in other media resources. Election to an academic position is carried out on the basis of the requirements of regulatory enactments and in accordance with the Regulation on Election to Academic Positions (available on Moodle, "EKA Administration", login in Annex 1). The election procedure and detailed criteria are laid down in the above-mentioned Regulation. Any lecturer who meets the requirements set out is eligible for the announced position.

Regardless of the status of the teaching staff in a higher educational institution, the evaluation of candidates is carried out according to the following criteria:

- Acquired education;
- Pedagogical work experience;
- Professional work experience;
- Achievements in science and/or creative work;
- Communication skills.

When applying for a job at the university, each lecturer is acquainted with the procedure for the organization of the study process, a work safety and fire safety briefing is carried out, a profile of the lecturer is created in the e-environment, information is provided about work and opportunities for providing support in the e-environment, and other work introduction activities.

**2.3.6. Specify whether there are common procedures for ensuring the qualification of the academic staff members and the work quality in place and provide the respective assessment thereof. Specify the options for all teaching staff members to improve their qualifications (including the information on the involvement of the teaching staff in different activities, the incentives for their involvement, etc.). Provide the respective examples and specify the way the added value of the possibilities used for the implementation of the study process and the improvement of the study quality is evaluated.**

EKA regularly organises the following events to improve the qualifications of teaching staff:

- Scientific seminars. Their aim is to promote the involvement of teaching staff in research, as well as to provide support for the preparation of publications in internationally cited databases;
- Methodological seminars;
- Methodological conferences;
- Participation in international scientific conferences in Latvia and abroad;
- Teaching courses in foreign universities;
- Courses according to the identified training needs.

Qualification development events are organized taking into account the development priorities of

the university and current events in the sector. During the reporting period, academic staff have been provided with all of the above measures.

**Table.** Examples of events organized during the reporting period and their results

Type of event	Results achieved
EKA scientific seminars	
<ul style="list-style-type: none"> <li>• Preparation of scientific publications</li> <li>• Application of quantitative methods in data processing</li> <li>• Use of special software for data processing (SPSS, R)</li> <li>• Errors in the application of data processing methods</li> <li>• Training on Academic Writing and Research Methods</li> <li>• Design Thinking for Research</li> </ul>	<p>The number of participating lecturers and publications has increased. Joint publications were published</p>
Methodological seminars	
<ul style="list-style-type: none"> <li>• "Study course description and study results: design, formulation, mapping" in collaboration with Albert College, Rīga Stradiņš University and BA School of Business and Finance</li> <li>• Workshop within the framework of International Week: "Formulating Learning Outcomes"</li> </ul>	<p>Formulations of study results in study programmes and study course descriptions have been changed</p>
"Preparation of final works"	<p>The structure of works, research methods have been changed. The quality of papers has increased</p>
"Digital learning tools"	<p>Teaching staff uses various tools in the study process</p>
<ul style="list-style-type: none"> <li>• "Development of Moodle e-course according to EkA requirements"</li> <li>• "Using the BigBlueButton video conferencing system in the study process"</li> <li>• Workshop within the framework of International Week: „Introduction to Moodle and Big Blue Button"</li> <li>• "Interactive content creation with Moodle and H5P"</li> </ul>	<p>E-courses have been created in more than 70% of the study courses. The work is ongoing.</p>
Methodological conferences	

Type of event	Results achieved
EKA annual methodological conferences	Use of digital technology tools in the study process, discussion of academic integrity and ethics, use of gamification aspects in the study process
International scientific conferences and publishing opportunities	
<ul style="list-style-type: none"> <li>• Participation in EKA International Scientific Conference <i>ETECH</i></li> <li>• Participation in international scientific conferences in Latvia and abroad</li> </ul>	Research results are used in teaching study courses The results are summarised in <a href="#">the Scientific and Creative Activity Reports</a>
Participation in projects	
Participation in projects	Exchange of experience, use and integration of the latest study and research methods in the study process, e.g. joint publications, use of new solutions in the study process
Teaching courses at foreign universities	
Lect. D.Finaškins (2017)	Kazan National Research Technical University named after A.N.Tupolev (Russia)
Assist.prof. P.Morevs (2022)	University of Central Lancashire Cyprus (UCLan Cyprus)
Guest lect. M.Žigunovs (2022)	University of Central Lancashire Cyprus (UCLan Cyprus)
Courses according to the identified training needs.	
English courses	Improved English language skills of the teaching staff
University didactics courses	Improved pedagogical competences of teaching staff
Course "Open COMSOL Multiphysics training course" (EKA docent P.Morevs)	COMSOL OU, Finland.

The quality assessment system for teaching staff is described in the Employee Performance Assessment System (available on Moodle "EKA Administration").

The quality of the work of the teaching staff is assessed by analysing the results of the student survey (twice a year), the quality of e-study courses on Moodle (four times a year), the results of the hospitation (visiting) of classes, scientific and creative activities (once a year), compliance with the lesson schedule, communication with the administration and students, and the number of complaints submitted (if applicable).

The teaching staff is informed about the results of the assessment of the quality of their work,

presenting them with the results of the survey, the results of quality control of e-courses, etc. If shortcomings are identified, then they are individually discussed with each lecturer, emphasizing actions to eliminate the shortcomings. The discussion is organised by the director of the study programme.

Existing system provides staff with necessary courses and seminars for professional qualification improvement, assesment of performance of staff members and recomendations for their work improvements.

### **2.3.7. Provide information on the number of the teaching staff members involved in the implementation of the relevant study programmes of the study field, as well as the analysis and assessment of the academic, administrative (if applicable) and research workload.**

24 staff members are involved in the implementation of the study direction. Study direction and programme academic staff qualification corresponds to the university aims and objectives implementation, because:

- In total, 24 teaching staff are involved in the implementation of the study direction, incl. 14 or 58.33% of those employed in the main job and 10 or 41.67% are guest lecturers;
- 62 CP or 53.44% is provided by those working in the main job, the remaining 54 CP or 46.56% is provided by guest lecturers (excluding free elective study courses, study papers and supervision of bachelor theses);
- 6 doctors of science (5 of them are elected to EKA) and 18 teaching staff with a master's degree (8 of them are elected to the EKA main job) participate in the implementation of the study direction;
- 1 professor (1 is an EKA professor), 1 associate professor (1 is an EKA associate professor), 9 docents (9 of them are EKA docents), 2 lecturers (2 of them are EKA lecturers) are involved in the implementation of the study direction;
- 3 EKA lecturers have the rights of an expert of the Latvian Council of Science, of which 1 EKA teaching staff is from the field of Natural Science - Computer Science and Informatics.

During the reporting period, the composition of the teaching staff underwent the following changes:

- Additionally, 1 guest lecturer with a PhD has been invited;

The changes are related to the implementation of the course Basics of Management for foreign flow students.

The workload of the teaching staff includes pedagogical, methodological work and research and creative activities. Pedagogical work (50-60%) includes conducting classes, conducting studies, supervising project and final work, etc. Methodological work (10-20%) involves updating one's own study courses, incl. attendance of e-courses, methodological events, etc. Research and creative work (20% - 40%) includes participation in research, projects, conferences and creative activities. Taking into account the fact that the implementation of the programme involves industry professionals, research workload accounts for the smallest part of the total load. Some lecturers are involved in the programme on a part-time basis.

**2.3.8. Assessment of the support available for the students, including the support provided during the study process, as well as career and psychological support by specifying the support to be provided to specific student groups (for instance, students from abroad, part-time students, distance-learning students, students with special needs, etc.).**

In the study process, EKA provides students, regardless of the form of study, incl., distance education students, with the following support:

- Information support. The Student Guide is available on the EKA website, where the information is structured by study stages. It also contains infographics on possible actions in cases of academic and financial debts, as well as on the main steps in the preparation of studies and final theses. Internal regulatory and methodological documents, as well as instructions for working in the e-environment are also available;
- Methodological support:
  - In EKA e-environment, teaching staff place study course materials, course acquisition requirements, and links to freely available bibliography sources. All of which makes it easier to access the information one needs to acquire courses;
  - consultations on the acquisition of the study course in person and electronically (e-mail, Skype, BBB);
  - consultations on the development of studies, projects and final works;
  - colloquium on the topicality, purpose of the topic of the final thesis, research methods used. At the colloquium, students are provided with recommendations at the initial stage of the development of the thesis.
- Career support:
  - guest lectures with industry professionals on the challenges in specific professions;
  - meetings with EKA graduates, during which graduates share their experience of their career paths and what should be paid attention to during their studies;
  - study tours to companies and organizations;
  - participation in professional competitions, e.g. Demola Latvia, Cup of Ideas, Riga Courage Grant, etc.;
  - Business incubator support;
  - if necessary, support is provided in the provision of internships.
- Financial support:
  - opportunity to receive a grant study place (only for Latvian and Kazakh students);
  - flexible payment schedule;
  - tuition fee discounts for applicants for good results in secondary education (only for Latvian students);
  - discounts on tuition fees for active participation in the Student Council;
  - tuition fee discounts for participation in professional competitions and research activities.
- Technical support: elimination of malfunctions of the e-environment, requirements for devices used in the study process. This support is provided after students inform technical staff or educational methodologists about problems by calling or writing emails.

All of the above support is available to foreign students and in addition:

- psychological support in the first months: the opportunity to discuss and receive support in household matters;

- Latvian language and culture training.

The Student Council implements the Mentoring Programme, within the framework of which the introduction of new students to the study process is ensured.

## 2.4. Scientific Research and Artistic Creation

### 2.4.1. Description and assessment of the fields of scientific research and/or artistic creation in the study field, their compliance with the aims of the higher education institution/ college and the study field, and the development level of scientific research and artistic creation (provide a separate description of the role of the doctoral study programmes, if applicable).

EKA's scientific research and production is organised in line with [EKA's development strategy 2023](https://www.augstskola.lv/upload/EKA_Strategija_2023_V14022019.pdf) ([https://www.augstskola.lv/upload/EKA\\_Strategija\\_2023\\_V14022019.pdf](https://www.augstskola.lv/upload/EKA_Strategija_2023_V14022019.pdf)) and the [Strategy for the Development of Scientific and Creative Activities](#) (ZRDAS2023). ZRDAS 2023 identifies five priorities with specific objectives in each priority that apply to all EKA study directions, incl., "Information Technologies":

1. Priority "Quality assurance in research and creative activity":
  - to ensure the quality of the study process by involving lecturers with developed research competences;
  - to ensure the achievements of research and creative activity at the EKA University of Applied Sciences.
2. Priority "Involvement of lecturers in research and creative activities in each direction of study":
  - to provide an opportunity for lecturers to engage in research and creative activities;
  - to develop the research competences of EKA lecturers and motivate them to engage in research and creative activities;
  - to ensure the achievements of the research and creative activities of EKA lecturers.
3. Priority "Involvement of students in research and creative activities in each direction of study":
  - to provide an opportunity for students to engage in research and creative activities;
  - to develop the research competences of EKA students and motivate them to engage in research and creative activities;
  - to ensure the achievements of the research and creative activities of EKA students.
4. Priority "Collaboration in research and creative activities":
  - strengthen existing and establish collaboration with other higher education institutions, institutions and employers in Europe, Asia, Africa and Northern America in the field of research and creative activity.
5. Priority "EKA's reputation":
  - to contribute to the enhancement of EKA's scientific reputation and the development of a

positive image in the local and international academic and scientific community.

These priorities and objectives correspond to the main tasks of the study direction "Information Technologies", as well as the EKA development priority "Science and Research".

The achievements of the study direction in research are analysed at the end of each study year, preparing [reports on scientific and creative activities](#) , as well as reports of the ZRDAS2023 Action Plan (not publicly available; upon request).

[EKA's priority research directions](#) were defined for 2021-2023. The research direction closely related to the study direction "Information Technologies" is "ICT and digitization research". This is an interdisciplinary research direction, and the research group consists of representatives of different fields of study ("Information Technologies", "Management", "Economics").

#### **2.4.2. The relation between scientific research and/or artistic creation and the study process, including the description and assessment of the use of the outcomes in the study process.**

Research directions are formulated according to the field of study directions, scientific interests of teaching staff and current events in the field of study direction. Research directions are approved by the Study Council.

According to the approved research directions, the lists of sample topics of study and final works are supplemented with topics that are studied in research directions.

For example, until 2021, one of the research directions in the field of study was "Cybersecurity" and the topic "Data protection training information systems" was included in the list of study papers of the study programme "Information Technologies", which corresponds to the research direction. In 2018/2019 one of the research directions was "Digital learning environment challenges and opportunities". On its basis, students were offered a variety of topics for study and final thesis. A graduate of the study programme "Information Technologies" for the 2018/2019 academic year developed and defended the bachelor thesis "Development of a study management information system for an educational institution", which corresponds to the research direction "Digital learning environment challenges and opportunities".

In 2020/2021, the Study Council decided to approve one direction "ICT research". Such a broad title ensures that the topics of study papers and final theses correspond to the research development strategy. In turn, starting from 2021/2022, a decision has been made to clarify the name and priorities, taking into account the modern trends "ICT and digitization research".

The results of scientific and applied research of the teaching staff of the direction are used in the teaching of study courses. For example, docent Mārcis Pinnis conducts research in the field of artificial intelligence and teaches the relevant study course.

The teaching staff also engages students in research by conducting research within the framework of the study paper and presenting their results at the Student Conference, working on projects, for example, in the ERDF project "Innovation grants for students in the interdisciplinary fields of art, culture, economics and information technology (MaKEIT)".

### 2.4.3. Description and assessment of the international cooperation in the field of scientific research and/or artistic creation by specifying any joint projects, researches, etc. Specify those study programmes, which benefit from this cooperation. Specify the future plans for the development of international cooperation in the field of scientific research and/or artistic creation.

Activities for the maintenance and promotion of international collaboration in EKA take place in accordance with the priorities of [the Internationalization and Modernization Strategy - IMS2023](#):

1. Improvement of international experience of students and staff.
2. Creating an international environment for EKA ("internationalization at home").
3. Development of competences of EKA students and staff.
4. Internationalization and modernization of study content.
5. EKA's international profile and recognition.
6. International cooperation in academic, research and creative activities.

Lecturers from foreign universities, together with EKA lecturers, participate annually in the international scientific conference "[Emerging Trends in Economics, Culture and Humanities \(etECH\)](#)" (<https://etech.eka.edu.lv/>) which EKA organizes together with Albert College (Latvia), Sumy State University (Ukraine) and Walsh College (USA). The conference is organized in several sections, one of which is "ICT solutions for business, management and education". In the period 2017-2021, colleagues from Kehl University of Applied Sciences (Germany), Cape Peninsula University of Technology (South Africa), University of Trento (Italy), University of Turku (Finland), Kazimiero Simonavičiaus University (Lithuania), and others participated in the ICT section together with EKA researchers (information on etECH conferences (programmes and abstract collections) is available on the EKA website <https://www.augstskola.lv/?parent=619&lng=lva>)

[International projects](#) related to the study direction "Information Technologies" in 2017-2022:

1. [Accelerating ICT students' start-up development competence via interdisciplinary modular courses in the HEI curricula](#) (project abbreviated name - Uxiship (Erasmus+, CBHE, No. 609870-EPP-1-2019-DE-EPPKA2-CBHE-JP). Coordinator: Wismar Hochschule (Germany).
2. ["Development of a virtual learning space as a tool for developing students' critical thinking, communication, collaboration and creativity skills in the context of COVID19" \(VILESA\)](#) (Erasmus+ KA2, No. 2021-1-LT-01-KA220-HED-000023551). Coordinator: Vilniaus kolegija (Lithuania).

One of the goals of the development of the study direction is "Involvement of teaching staff in scientific research and/or artistic creation". To achieve results in this direction, a new practice has been introduced in EKA - the formation of international research teams. The team "Research in ICT and digitalization" created within the framework of the IT study direction currently consists of 14 people representing EKA, Albert College, Cape Peninsula University of Technology (South Africa), European Digital Learning Network - Dlearn (Italy), Hochschule Kehl University of Applied Sciences (Germany), Western Norway University of Applied Sciences (Norway), Vilnius Tech (Lithuania). A description of the team is available in [EKA's Scientific and Creative Activities Annual Report](#).

There is a potential for the development of international collaboration in the field of research, taking into account both the growing range of partners and the systemic EKA approach to support research (especially in cooperation with foreign colleagues) (see "Regulations for Research and Artistic Creation Activities") and several years of regular events that allow the creation of research links ([etECH conference section "ICT solutions for business, management and education"](#))

Future plans for the development of international collaboration in research are related to the achievement of the goals set by IMS2023:

- *Strengthen existing collaboration and extend it with other universities, institutions and employers in Europe, Asia, Africa and North America in the field of research and creative activity.* EKA plans to sign new collaboration agreements (for example, in 2022, negotiations are underway on the establishment of a cooperation with the Ss. Cyril and Methodius University in Skopje (Macedonia), which has the Faculty of Computer Science and Engineering).
- To improve the quality of the EKA research process by attracting internationally recognized and qualified researchers to carry out scientific activities (it is planned to expand the composition of the international research team)

**2.4.4. Specify the way how the higher education institution/ college promotes the involvement of the teaching staff in scientific research and/or artistic creation. Provide the description and assessment of the activities carried out by the academic staff in the field of scientific research and/or artistic creation relevant to the study field by providing examples.**

"Involvement of lecturers in research and creative activities in each field of study" is one of the priorities of the ZRDAS2023. The involvement of teaching staff in scientific research activities takes place:

- providing methodological and informational support on research design, research methods, information on technology solutions for research purposes. For example, when organizing scientific seminars, methodological conferences (see information in the Reports on Scientific and Creative Activities; Moodle in the folder "Administration")
- forming research groups in each direction of research. A research group established within the framework of the IT direction operates in the direction "Research in ICT and digitalization".
- providing financial support for the preparation of publications and participation in conferences within the framework of the Scientific Budget (see information in the document "Regulations for Research and Artistic Creation Activities"; Moodle in the folder "Administration")
- organizing scientific, incl. international, events at the university, such as EKA's annual international scientific conference etECH, which has been organized since 2017.

The teaching staff of the IT direction regularly publishes scientific articles, incl. editions indexed in Web of Science and/or SCOPUS databases.

Such as:

- **Pinnis, M.**, Busemann, S., Vasiļevskis, A., & van Genabith, J. (2022). The German EU council presidency translator. *KI-Künstliche Intelligenz*, 36(1), 99-104. **WOS**:000709791000001
- **Morevs, P.**, Khudzhina, M. V., Dzhambetov, E., & Karakozov, S. D. (2021). ADI method advantages for numerical solution of elliptic 2D differential equations. *Acta Prosperitatis*, (12), 76-226.
- **Rasnacs, O.**, & Vitins, M. (2019). Computer Based Tests for the Courses of Informatics and Statistics of the Health Care Specialties. In *Rural Environment. Education. Personality (REEP)*,

Proceedings of the 12th International Scientific Conference, Jelgava, Latvia 10th-11th May 2019 (pp. 297-302). Latvia University of Life Sciences and Technologies. **WOS**:000540979800039

- Meijere, S., **Tambovceva, T.** (2019). Preconditions of Successful Implementations of Predictive Analytics Solutions". Proceedings of the 34th International Business Information Management Association Conference, IBIMA 2019 - Vision 2025: Education Excellence and Management of Innovations through Sustainable Economic Competitive Advantage, Madrid, Spain, 13-14 November, 2019, 6456-6465. **WOS**

The IT direction faculty regularly participates in the IT section of the etECH conference, for example:

In 2021

- Tatjana Tambovceva. Consumer demand for Latvian information technologies.
- Patriks Morevs. On the functional nodal method for 2D elliptic equations.

In 2020

- Dmitrijs Finaskins. Secure near real-time data processing in aws cloud using docker containers.

In 2019

- Dmitrijs Finaskins. Data pre-processing and machine learning capabilities in apache spark.
- Tatjana Tambovceva. Big data and city management.

The accredited study programme is professional bachelor programme. In case of type of the study programme EKA staff is involved in research. The EKA involves professionals from the labour market, which are not enough involved in research. It is necessary to involve them in research activities in the future, by providing research experience for all member of academic staff.

**2.4.5. Specify how the involvement of the students in scientific research and/ or applied research and/or artistic creation activities is promoted. Provide the assessment and description of the involvement of the students of all-level study programmes in the relevant study field in scientific research and/ or applied research and/or artistic creation activities by giving examples of the opportunities offered to and used by the students.**

Participation of students in scientific research and creative activity is an integral part of the study process, the following possibilities have been provided to students of the study programme:

- Study course "Research Work Organisation" within the framework of the study programme, which is mandatory for all students;
- Conducting research by developing a study paper and final thesis within the framework of an approved research direction or on other actual topics in the field. These papers must be developed by all students;
- Presentation of the results of the research at the International Student Conference, which is organized by EKA in collaboration with Albert College or other conferences. For example, in 2021/2022, 5 students participated in the EKA conference;
- Publication of the results of the research in the Collection of Student Articles. For example, in 2021/2022, 8 scientific articles of students of the study direction were published in the Collection of Student Articles;

- Participation in international conferences. For example, at the international conference within the framework of ETECH, a student of the bachelor's study programme "Information Technologies" together with the programmes lecturer participated in the development of the presentation and speech during the conference;
- Attending guest lectures and attending an IT seminar (workshop) is a mandatory requirement for the project work course. For example, the students participated in a workshop organized by EKA and its partner IT company "Like a Coffee", the purpose of which was the development and publication of the app. The workshop was led by programmers from Italy.
- Participation in projects:
  - Third- and fourth-year students participate in the ERDF project "Innovation grants for students in the interdisciplinary fields of art, culture, economics and IT MAKEIT". For example, an IT student together with students from other programmes has developed an app within the framework of the project.
  - participation in the project "Financial literacy challenge" (team "Mixer" together with students from the programme "Logistics") and at the end of the project, in the study "Perceived importance of financial issues: Results of financial literacy challenge for Latvian students", the results of which were presented at the International Scientific Conference "Emerging Trends in Economics, Culture and Humanities (etECH2022)".
  - participation in international projects - for example, in the Erasmus+ KA2 project "Development of a virtual learning space as a tool for developing students' critical thinking, communication, collaboration and creativity skills in the context of COVID19" (VILESA)" .

**Table.** Participation of students in research activities

Activity	2017/2018	2018/2019	2019/2020	2020/ 2021	2021/2022	2022 /2023
Number of publications in the collection of student articles	4	4	6	3	8	
Participation in the Student Conference, number of students	1	2	2	0	5	
Abstracts published in the conference abstracts collection	4	4	6	3	8	
Participation in projects, number of students					4	10
Knowledge transfer (introduction of student research results in enterprises), number of enterprises						2

Financial support for students is offered to cover the following categories of costs (Regulations for Research and Artistic Creation Activities, point 5.7):

- the cost of publishing scientific articles;
- costs of participation in conferences;

- costs of participation in exhibitions;
- other costs for the provision of research and artistic creation activities agreed with the Vice-Rector for Science.

Information on the procedure for receiving financial support is available on the EKA website, "Student Guide". Information about [the Student Conference](#) is also available on the EKA website and is also disseminated on EKA's social media profiles and within the framework of study programmes with the support of the communication of programme directors.

**2.4.6. Provide a brief description and assessment of the forms of innovation (for instance, product, process, marketing, and organisational innovation) generally used in the higher education institution, especially in study field subject to the assessment, by giving the respective examples and assessing their impact on the study process.**

EKA, in its work, uses various solutions with the aim of strengthening its competitiveness and promoting work efficiency. During the reporting period, the following solutions and their application were introduced:

- Distance learning organization. Online video lectures are organized for EKA students according to the list of classes. During the lectures, they are recorded and are available to students throughout the semester. During the online lecture, the teaching staff and students actively communicate, students can present assigned tasks, participate in seminars, discussions and group work. The materials necessary for the acquisition of the study course, independent works, course description and other information are available on Moodle, which the teaching staff must place according to a certain template. Students submit independent papers, take examinations using e-environment tools;
- Unified database of students and teaching staff NEXUS. This solution made it possible to digitize a number of processes and document processing at the university. For example: application and preparation of statements, issuing orders, drawing up study contracts and amendments, preparing diplomas, compiling statistical data for external and internal needs, etc. The database is integrated with the EKA e-environment, which allows, in a convenient way, to provide students with information about their achievements and financial situation, granting/removing the rights of students' and lecturers' users in the e-environment, organization of surveys, etc.;
- For faster information transfer and accessibility, on Moodle a dedicated website called "EKA Administration" has been created. It contains up-to-date strategic documents, information on scientific events, methodological materials, etc.;
- Student's Guide. An electronic guide containing information about the study process in breakdown by stages, which are possible during the course of the student at the university. In each section, a corresponding internal regulatory document, application forms, infographics, links to other informative resources are available (if applicable).
- My EKA app for students: for faster browsing of the list of classes, announcements and updates, the student's profile.
- IT teaching staff uses various tools and platforms during lectures, it ensures interactivity of the process and gives students the opportunity to demonstrate problem solving, modelling, product prototype development in real time.

## 2.5. Cooperation and Internationalisation

**2.5.1. Provide the assessment as to how the cooperation with different institutions from Latvia (higher education institutions/ colleges, employers, employers' organisations, municipalities, non-governmental organisations, scientific institutes, etc.) within the study field contributes to the achievement of the aims and learning outcomes of the study field. Specify the criteria by which the cooperation partners for the study field and the relevant study programmes are selected and how the cooperation is organised by describing the cooperation with employers. In addition, specify the mechanism for the attraction of the cooperation partners.**

EKA collaborates with a number of institutions: companies, governmental and non-governmental organizations, professional associations, universities, colleges, secondary schools, etc. Collaboration is planned and organized depending on the type of institutions, as well as geographical location. The main criteria for starting collaboration are: reputation of the partner, compliance with the specifics of the direction activity and benefit to all collaboration partners. Employers are attracted by participating in industry associations, such as the Latvian Information Communication Technology Association (LIKTA), the Latvian Open Technology Association (LATA), teaching staff and administrative staff participating in professional and scientific conferences, as well as other events.

The main directions of collaboration are as follows:

- Participation in scientific research and creative activities;
- Participation in the improvement of study directions and study programmes;
- Provision of places of practice (see list of concluded contracts available in annex);
- Organization of methodological events;
- Organization of guest lectures and creative workshops;
- Organization of student competitions and olympiads;
- Participation in state final examinations, incl. revision of works.

The chosen directions of collaboration allow to ensure both the achievement of the strategic goals set out in the EKA development strategy, as well as the goals of the study direction.

In collaboration with higher educational institutions, emphasis is placed on scientific research and creative activities, staff qualification development and methodological activities.

Table 8 Examples of collaboration with employers, organizations and educational institutions in the field of study

Activity	Name of the activity	Partner
<b>ORGANISATION OF GUEST LECTURES AND CREATIVE WORKSHOPS</b>		
Guest lectures by professionals	„Programming languages”	IT company “JOSS”
	“Challenges of programmer’s profession”	ITcompany “Proof IT”
	“GDPR for IT professionals”	ARS, IT department
<b>ORGANIZATION OF STUDENT COMPETITIONS AND OLYMPIADS</b>		

Competitions for secondary school pupils	Olympiad "Open Mind"	Latvian Open Technology Association
		Tet

### **PARTICIPATION IN STATE FINAL EXAMINATIONS**

State Examination Commission	Defence of bachelor thesis	Agnis Škuškovniks, "ARS", Head of IT department
State Examination Commission	Defence of bachelor thesis	Jānis Lelis, CEO of Latvian Telecommunication association
State Examination Commission	Defence of bachelor theses	Jevgenija Šahovala, SIA „Like A Coffee” java programmer

### **PARTICIPATION IN PROJECTS**

Project "Innovation grants for students in the interdisciplinary fields of art, culture, economics and IT MaKE It"	Provision of practical task for students	"Prosthetics and Orthopaedics Centre"
	Mentoring	Valpro IT
	Provision of practical task for students	European Distance Secondary School (Eiropas Tālmācības vidusskola)
	Collaboration partner	"EIROLCDS" Ltd
	Collaboration partner	The Institute of Economics of Latvian Academy of Sciences
	Collaboration partner	Ventspils High Technology Park
Participation in ESF project "Automation tools in creative industries AUTORADE" (14.1.1.1.)	Collaboration partner	Transport and Telecommunication Institute
	Collaboration partner	Rezekne Academy of Technologies
	Collaboration partner	Vidzeme University of Applied Sciences
	Collaboration partner	Latvian Digital Accelerator
	Collaboration partner	Ventspils High Technology Park
	Collaboration partner	The University of Latvia.
	Collaboration partner	Liepāja University

### **PARTICIPATION IN SCIENTIFIC RESEARCH AND CREATIVE ACTIVITIES**

International Scientific Conference	Emerging Trends in Economics, Culture and Humanities ETECH	Albert college
International Student Conference	"Student Research Activity: Theory and Practice".	

#### **ORGANIZATION OF METHODOLOGICAL EVENTS**

Methodological seminar	Study course description and studyresults: design, formulation, mapping	Albert College, BA School of Business and Finance, Riga Stradins University
Annual Methodological Conference;	Modern teaching methods to increase the quality of the study process	Albert college
Professional development	University didactics	Daugavpils University

Cooperation with partners allow to achieve the goal of the study field, but it is necessary to strength cooperation in projects and creative activities.

**2.5.2. Provide the assessment as to how the cooperation with different institutions from abroad (higher education institutions/ colleges, employers, employers' organisations, municipalities, non-governmental organisations, scientific institutes, etc.) within the study field contributes to the achievement of the aims and learning outcomes of the study field. Specify the criteria by which the cooperation partners suitable for the study field and the relevant study programmes are selected and how the cooperation is organised by describing the cooperation with employers. In addition, specify the mechanism for the attraction of the cooperation partners.**

EKA collaborates with a number of organisations: enterprises, governmental and non-governmental organisations, professional associations, universities, colleges, secondary schools, etc. (more detailed information is in the self-assessment reports of study directions). Collaboration is planned and organized depending on the type of institutions, as well as geographical location. The main criteria for starting collaboration are: reputation of the partner and benefit to all collaboration partners.

The main directions of collaboration are as follows:

- Participation in scientific research and creative activities;
- Participation in the improvement of study directions and study programmes;
- Organization of methodological events;
- Organization of guest lectures and creative workshops;

Collaboration with foreign universities has been developed in projects, within the framework of Erasmus+mobility, as well as in organizing and attending international events. When choosing collaboration partners, the focus is on related fields of study and research and their interdisciplinary and linkage with other directions in partner universities.

EKA has signed a number of inter-institutional agreements within the framework of the Erasmus+

programme with foreign universities in the field of IT, such as Schmalkalden University of Applied Sciences and University of Applied Sciences Kehl (Germany), University of Central Lancashire Cyprus, Vilnius Business College (Lithuania) and others. Collaboration with some foreign lecturers takes place on a regular basis, (for example, Prof. Uwe Busbach from Kehl University as part of the "Software engineering" course). Other lecturers participate in certain events, such as International Academic Week (for example, within the framework of IAW2022 – Prof. Renata Walczak from Warsaw University of Technology (Poland) with a lecture "Internet of Things Acceptance in Smart City of Płock, Poland").

**Table.** Examples of collaboration with higher education institutions in the study direction

Activity	Name of the activity	Partner
<b>PARTICIPATION IN SCIENTIFIC RESEARCH AND CREATIVE ACTIVITIES</b>		
Project	"Development of a virtual learning space as a tool for developing students' critical thinking, communication, collaboration and creativity skills in the context of COVID19" (VILESA) (2021-2024)	<ul style="list-style-type: none"> <li>• Draudimo ir rizikos valdymo institutas (Lithuania),</li> <li>• Uniwersytet Ekonomiczny w Krakowie (Poland),</li> <li>• Iron Cat (Lithuania).</li> </ul>
Project	"Accelerating ICT students' start-up development competence via interdisciplinary modular courses in the HEI curricula" (Uxishop) (2019-2022)	<ul style="list-style-type: none"> <li>• Hochschule Wismar, University of Applied Sciences (Germany),</li> <li>• Tallinn University of Technology (Estonia),</li> <li>• Kostanay State University (Kazakhstan),</li> <li>• Almaty Management University (Kazakhstan),</li> <li>• Caspian State University (Kazakhstan),</li> </ul>
Project	"Mobility of individuals between programme and partner countries in the higher education sector" (2018-2019)	Kazan National Research Technical University named after A.N.Tupolev (Russia) (2018)
Project	Promoting E-Learning for Adults to Improve Quality and Availability of Life-Long Education (2017-2018)	<ul style="list-style-type: none"> <li>• Insurance and Risk Management Institute (Lithuania),</li> <li>• Copenhagen Business School (Denmark)</li> </ul>
International Scientific Conference	International conference ETECH co-organisers	Walsh College (USA)

Activity	Name of the activity	Partner
International Scientific Conference	Participation in the ETECH ICT section of the EKA International Conference	University of Applied Sciences Kehl (Germany).
International Scientific Conference	International conference ETECH co-organisers	University of Economics in Katowice (Poland)

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### **ORGANISATION OF GUEST LECTURES AND CREATIVE WORKSHOPS**

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Foreign teachers' guest lectures	"Project team, project leader"	<i>Ph.D. Ing., LENKA SMOLIKOVA</i> , University of Technology, Brno, Faculty of Business and Management, Department of Management (Czech Republic)
	„User image analysis in contemporary IT technology”	Lect. Yulia Efimova, Kazan National Research Technical University named after A.N.Tupolev (Russia) (2018)
	“Inter- vehicle cooperative perception system”	Lect. Artem Gavrilov, Kazan National Research Technical University named after A.N.Tupolev (Russia) (2018)
	"Business idea development - six thinking hats technique"	<i>Dr. DAVID SCHÜLLER</i> , Assistant Professor, Brno University of Technology, Faculty of Business and Management, Department of Management (Czech Republic).

Activity	Name of the activity	Partner
Lectures at a foreign university	"Data Mining", lect. D.Finaškins	Kazan National Research Technical University named after A.N.Tupolev (Russia) (2017)
	Patriks Morevs	University of Central Lancashire Cyprus (UCLan Cyprus)
	Maksims Žigunovs	University of Central Lancashire Cyprus (UCLan Cyprus)
Professional development	Course "Open COMSOL Multiphysics training course" (EKA assist.prof. P.Morevs)	COMSOL OU, Finland.
	WORKSHOP "Developing International & Interdisciplinary Research Coalition"	Michael A. Radin, Ph.D. Associate Professor of Mathematics, Rochester Institute of Technology (USA)

### **MEMBERSHIP IN INTERNATIONAL ASSOCIATIONS**

Membership in Association	Collaboration in training and research (seminars, participation in conferences)	European Digital Learning Network
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International cooperation promotes internationalization of the study field: experience exchange for staff and students, development of professional qualification of the staff during international events, collaboration in international teams etc. It allows to fulfill tasks of the study field.

### **2.5.3. Specify the system or mechanisms, which are used to attract the students and the teaching staff from abroad. Provide the assessment of the incoming and outgoing mobility of the teaching staff in the reporting period, the mobility dynamics, and the issues which the higher education institution/ college faces with regard to the mobility of the teaching staff.**

The attraction of foreign students is mainly carried out by participating in international exhibitions and cooperating with agents. Since 2017, EKA has been a member of the Higher Education Export Association. This association sets certain standards for attracting foreign students, including admission criteria. The selection of foreign students is carried out in accordance with the requirements of regulatory enactments and the Admission Regulations and includes a test of the applicant's knowledge in the field of the study programme and a test of knowledge of the English language.

During the reporting period, the number of foreign students in the study direction increased significantly from 6 students in 2018/2019 (when EKA started an IT programme for the flow of foreign students) to 22 students in 2022/2023.

During the reporting period, foreign teaching staff were mostly attracted as guest teachers, taking advantage of the Erasmus+ mobility programme. During the reporting period, the number of foreign teaching staff has been small - 2 lecturers. The teaching staff conducted classes and guest lectures for students of the direction study programme.

Students of the Latvian flow of the study programme "Information Technologies" do not use such an opportunity for the time being. The majority of the Latvian flow students of the study direction are working citizens of Latvia and this could be one of the reasons why students do not use yet the opportunity to study at other universities within the framework of the *ERASMUS+* programme.

2018 Within the framework of the ICT direction, the implementation of the "Information Technology" programme in English was started. The form of study of the programme is full-time. This form of study gives students more opportunities to benefit from *ERASMUS+* mobility opportunities. With the 3rd semester of the 2nd year, foreign students have the opportunity to go for an internship or take programme courses at other universities within the framework of the *ERASMUS+* programme. EKA has contracts with more than 21 universities, and a very wide choice is also available to students of the ICT direction.

In order to motivate students to participate in *the ERASMUS+* programme, they are provided with consultations with EKA specialists as well as organised presentations.

It is planned to attract teaching staff based on previous experience with foreign partners, as well as through the Euroaxess network, of which EKA is also a member.

In the reporting period EKA staff had participated in mobility programmes teaching students at foreign HEI and visiting foreign HEI for experience exchange (see Annex 17).

**Table.** Dynamics of the number of foreign students and teaching staff in the study direction

	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023
Number of foreign students (first enrolment in 2018/2019)	n/a	6	13	14	21	22
Number of foreign students (Erasmus+ mobility)	0	0	0	0	0	4
Number of foreign teaching staff, (incl. Erasmus+ mobility)	3	4	3	2	2	4

## 2.6. Implementation of the Recommendations Received During the

## Previous Assessment Procedures

**2.6.1. Assessment of the fulfilment of the plan regarding the implementation of the recommendations provided by the experts during the previous accreditation of the study field, as well as the assessment of the impact of the given recommendations on the study quality or the improvement of the study process within the study field and the relevant study programmes.**

After the 2016 accreditation, a number of recommendations were received from the experts. Implementation of the recommendations provides an opportunity to improve the study process and quality.

Recommendation 1. To improve the descriptions of study courses in order to more accurately reflect the compliance of the course content with the title of the study course and current events in the field (short-term)

During the reporting period, all course descriptions mentioned by experts have been improved, the content of course descriptions has been approved at a meeting of the IT Council. Some courses have name and volume changed.

Recommendation 2. To ensure the duration of e-courses (on-line) in accordance with the number of hours specified in the study course descriptions (short-term)

The recommendation was indicated incorrectly, EKA informed about it by submitting the document "Indications of the higher education institution regarding factual errors detected in the joint opinion of the commission for the evaluation of the study direction."

Recommendation 3. More precisely define the aims of the internship and the results of studies (short-term)

The aims and objectives of the internship are defined in the document "Internship programme and tasks" and are approved at the meeting of the IT Council.

Recommendation 4. To formulate more precisely the aim, tasks and study results of the study programme (short-term)

During the reporting period, a document was incorporated and approved, in which the aims, tasks and results of the study programme (knowledge, skills, competences) in categories according to the LQF 6 level were updated and approved, in accordance with the profession standard and the Regulations of the Cabinet of Ministers on the state standard of the second level professional higher education.

Recommendation 5. Aligning course descriptions with EQUANIE, ACM&IEEE requirements and recommendations (long-term)

During the reporting period, the teaching staff of the study programme were aware of the requirements. The changes and recommendations were discussed at the IT Council meeting. The course descriptions of the programme have been refined and aligned with the requirements and recommendations of EQUANIE, ACM&IEEE.

Recommendation 6. To improve the existing technical support by expanding the possibilities of servers for homework (long-term)

During the reporting period, the technical provision has been improved in accordance with the recommendations of experts and the requirements for the acquisition of courses. The server has been refurbished and modernized and the capacity for storing home, laboratory and independent work has been expanded.

Recommendation 7. Create additional laboratories "for hardware related courses" (long-term)

Additional laboratories have been established. Computer classes are equipped with the necessary software,

For laboratory work and testing processes, computer classes are provided with equipment and spare parts for the computer system (motherboards, network cards, memory module, and others.)

Recommendation 8. Development of a plan for the improvement of language knowledge and provision of training for academic staff (long-term)

A plan has been prepared for the improvement of the language skills of the academic staff. During the reporting period, the level of training and knowledge of the language has been improved.

Recommendation 9. Attract more lecturers with a doctoral degree and involve them in teaching study courses in the study direction (long-term)

Due to the shortage of lecturers with doctoral degrees in the ICT sector and the type and level of the programme (professional bachelor programme), this recommendation has been partially implemented. During the reporting period, several lecturers with a master's degree in ICT industry joined the implementation of the programme. Currently, two lecturers are studying for doctoral degrees.

Recommendation 10. To promote collaboration with employers by involving them more intensively in the implementation of the study programme (long-term)

During the reporting period, a number of employers were engaged to implement the programme. Employers conducted guest lectures, presentations, organized IT workshops, participated in IT council meetings. EKA became a member of LATA and LIKTA.

Recommendation 11. Determine research directions, closely related to the study direction (short-term)

Currently, the IT programme has the only research direction - ICT solutions. The direction is closely related to the study direction. Approval of research directions takes place every year in the autumn semester at a meeting of the IT Council.

Recommendation 12. Set up research teams with a lead researcher (short-term)

During the reporting period, research groups have been established with a leading researcher according to each direction of research. The composition of the participants is approved annually, in September.

Recommendation 13. Develop a procedure for the preparation and publication of scientific articles (short-term)

The procedures have been developed and are available to staff in the EKA e-environment in the course "EKA Administration". The REGULATION FOR THE ACTIVITIES OF RESEARCH AND ARTISTIC CREATION OF THE EKA UNIVERSITY OF APPLIED SCIENCES has been developed .

Recommendation 14. Establish collaboration with the industry in the field of R&D (long-term)

During the reporting period, research activities were carried out involving EKA lecturers and

students.

Joint research projects with employers have been launched. In 2017/2018 in collaboration with the Latvian Open Technology Association, a competition for student works was organized. In 2021, the ERDF project "Innovation grants for students in the interdisciplinary fields of art, culture, economics and IT - MaKE IT" was launched, within the framework of which students work both on their innovative ideas and solve situations given by employers.

Recommendation 15. To ensure the conduct of student research at the bachelor level. (long-term)

During the reporting period, student research was conducted in several specialized courses, their results are presented at the Student Conference and published in the collection of student papers.

Recommendation 16. To provide additional support to lecturers in the preparation and management of e-courses (short-term)

During the reporting period, methodological and technical support for lecturers has been provided: additional training has been organized and instructions for creating an e-course have been improved. Regular control of studies is provided. The e-studies coordinator has started his work.

**2.6.2. Implementation of the recommendations given by the experts during the evaluation of the changes to the study programmes in the respective study field or licensed study programmes over the reporting period or recommendations received during the procedure for the inclusion of the study programme on the accreditation form of the study field (if applicable).**

***(Not applicable)***

# Annexes

I - Information on the Higher Education Institution/ College		
Information on the implementation of the study field in the branches of the higher education institution/ college (if applicable)		
List of the governing regulatory enactments and regulations of the higher education institution/ college	1_Annex_EKA_List_regulations_2023.xlsx	1_pielikums_EKA_Nolikumu_saraksts_2023.xlsx
The management structure of the higher education institution/ college	2_Annex_EKA_Structure.docx	2_pielikums_EKA_Sturktura.docx
II - Description of the Study Field - 2.1. Management of the Study Field		
Plan for the development of the study field (if applicable)	3_Annex_ICT_Study_direction_development_plan.docx	3_pielikums_IKT_Virziena_attistibas_plans.docx
The management structure of the study field	4_Annex_Management_structure_study_direction.docx	4_pielikums_Virziena_parvaldibas_struktura.docx
A document certifying that the higher education institution or college will provide students with opportunities to continue their education in another study programme or another higher education institution/ college (agreement with another accredited higher education institution or college) if the implementation of the study programme is terminated.	5_annex_Contracts_HEI_IT.docx	5_pielikums_Ligumi_All_studiju_turpinasana.zip
A document certifying that the higher education institution or college guarantees compensation for losses to students if the study programme is not accredited or the study programme license is revoked due to actions (actions or omissions) of the higher education institution or college and the student does not wish to continue studies in another study programme.	6_annex_Confirmation_quarantee_losses.docx	6_pielikums_Aplicinajums_zaudejumi_garantija.docx
Standard sample of study agreement	7_annex_Study_Contract.docx	7_pielikums_Studiju_liguma_paraugs.docx
II - Description of the Study Field - 2.2. Efficiency of the Internal Quality Assurance System		
Analysis of the results of surveys of students, graduates and employers	8_Annex_Survey_results.docx	8_pielikums_Aptauju_rezultati.docx
II - Description of the Study Field - 2.3. Resources and Provision of the Study Field		
Basic information on the teaching staff involved in the implementation of the study field	9_Annex_ICT_Involved_teachers.docx	9_Pielikums_IKT_Iesaistitie_macibspēki.docx
Biographies of the teaching staff members (Curriculum Vitae in Europass format)	10_Annex_CV_IKT_ENG_2022.zip	10_pielikums_CV_IKT_LV_2022.zip
A statement signed by the rector, director, head of the study programme or field that the knowledge of the state language of the teaching staff involved in the implementation of the study programmes within the study field complies with the regulations on the state language knowledge and state language proficiency test for professional and official duties.	11_Annex_Confirmation_staff_languages.docx	11_pielikums_Aplicinajums_valsts_valoda_svesvaloda.edoc
A statement of the higher education institution/ college on the respective foreign language skills of the teaching staff involved in the implementation of the study programme at least at B2 level according to the European Language Proficiency Assessment levels (level distribution is available on the website www.europass.lv, if the study programme or part thereof is implemented)	11_Annex_Confirmation_staff_languages.docx	11_pielikums_Aplicinajums_valsts_valoda_svesvaloda.edoc
II - Description of the Study Field - 2.4. Scientific Research and Artistic Creation		
Summary of quantitative data on scientific and/ or applied research and / or artistic creation activities corresponding to the study field in the reporting period.	12_Annex_Quantitative_data_research_creative_activities.docx	12_pielikums_Petnieciba_jaunrade_kvantitativie_raditaji.docx
List of the publications, patents, and artistic creations of the teaching staff over the reporting period.	13_Annex_List_publications.docx	13_pielikums_Macibspeku_publicikcijas.docx
II - Description of the Study Field - 2.5. Cooperation and Internationalisation		
List of cooperation agreements, including the agreements for providing internship	14_Annex_List_partners.docx	14_pielikums_Partneru_saraksts.docx
Statistical data on the teaching staff and the students from abroad	15_Annex_Foreign_students_staff.docx	15_pielikums_Arvalstu_Studentu_macibspeku_skaitis.docx
Statistical data on the incoming and outgoing mobility of students (by specifying the study programmes)	16_Annex_Student_mobility.docx	16_pielikums_Studentu_mobilitate.docx
Statistical data on the incoming and outgoing mobility of the teaching staff	17_Annex_Staff_mobility.docx	17_pielikums_Personala_mobilitate.docx
II - Description of the Study Field - 2.6. Implementation of the Recommendations Received During the Previous Assessment Procedures		
Report on the implementation of the recommendations received both in the previous accreditation and in the licensing and/ or change assessment procedures and/ or the procedures for the inclusion of the study programme on the accreditation form of the study field.	18_Annex_Recommendations_report.docx	18_pielikums_Rekomendaciju_izpildes_parskats_IT.docx
An application for the evaluation of the study field signed with a secure electronic signature	19_Annex_application.edoc	19_pielikums_iesniegums.edoc
III - Description of the Study Programme - 3.1. Indicators Describing the Study Programme		
Sample of the diploma and its supplement to be issued for completing the study programme		
For academic study programmes - Opinion of the Council of Higher Education in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions (if applicable)		
Compliance of the joint study programme with the provisions of the Law on Higher Education Institutions (table) (if applicable)		

Statistics on the students in the reporting period		
<b>III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof</b>		
Compliance with the study programme with the State Education Standard		
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard or the requirements for professional qualification (if applicable)		
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		
Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme		
The curriculum of the study programme (for each type and form of the implementation of the study programme)		
Descriptions of the study courses/ modules		
Description of the organisation of the internship of the students (if applicable)		
<b>III - Description of the Study Programme - 3.4. Teaching Staff</b>		
Confirmation that the academic staff of the doctoral study programme includes not less than five doctors, of which at least three are experts approved by the Latvian Council of Science in the branch or sub-branch of science in which the study programme intends to award a scientific degree (if applicable)		
Confirmation that the academic staff of the academic study programme complies with the requirements specified in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions (if applicable)		

## Other annexes

Name of document	Document
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# Information Technologies (42484)

Study field	<i>Information Technology, Computer Hardware, Electronics, Telecommunications, Computer Management, and Computer Science</i>
ProcedureStudyProgram.Name	<i>Information Technologies</i>
Education classification code	<i>42484</i>
Type of the study programme	<i>Professional bachelor study programme</i>
Name of the study programme director	<i>Jurijs</i>
Surname of the study programme director	<i>Radionovs</i>
E-mail of the study programme director	<i>jurijs.radionovs@eka.edu.lv</i>
Title of the study programme director	<i>M.oec.</i>
Phone of the study programme director	<i>+37129185149</i>
Goal of the study programme	<i>Train programming engineers for professional information technology industry, whose knowledge, skills and abilities meet the demands of modern labour market</i>
Tasks of the study programme	<ol style="list-style-type: none"> <li><i>1. Ensure the process of study meeting the requirements of legislation, labour market and occupational qualifications, as well as the targeted access of students to higher education.</i></li> <li><i>2. Ensure the pedagogical and scientific qualifications of the teaching staff.</i></li> <li><i>3. To provide and develop research activities in the study programme.</i></li> <li><i>4. To provide and develop infrastructure and facilities according to the study programme implementation needs.</i></li> <li><i>5. To develop international collaboration with related higher education institutions, enterprises and organizations.</i></li> </ol>

Results of the study programme	<ol style="list-style-type: none"> <li>1. Knows and understands the principles, methods and regularities of engineering in the field of information technology.</li> <li>2. Manages information technology industry standards and terminology.</li> <li>3. Able to apply theoretical knowledge of information technology, including data structures, algorithms, system theory and computer architecture.</li> <li>4. Able to apply information technology in the development of computer systems, including software and database development and computer networking.</li> <li>5. Able to ensure the operation of the company's information technology system.</li> <li>6. Is capable to build data conceptual model and physical model.</li> <li>7. Is able to configure, develop, implement and maintain the environment and software.</li> <li>8. Able to make decisions.</li> <li>9. Is able to conduct research activities on current events in the field of information technology.</li> <li>10. Able to discuss current developments in the professional field in a reasoned manner.</li> <li>11. Able to work independently.</li> <li>12. Is able to work in a team.</li> <li>13. Able to solve technical problems.</li> <li>14. Is able to collect, analyse, evaluate and systematise information.</li> <li>15. Able to find solutions, use them in decision-making in professional activity.</li> </ol>
Final examination upon the completion of the study programme	Bachelor Paper

## Study programme forms

### Full time studies - 4 years - latvian

Study type and form	Full time studies
Duration in full years	4
Duration in month	0
Language	latvian
Amount (CP)	160
Admission requirements (in English)	Secondary education
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	Professional bachelor degree in computer science
Qualification to be obtained (in english)	Programming Engineer

### Places of implementation

Place name	City	Address
EKA University of Applied Sciences	RĪGA	LOMONOSOVA IELA 1 k-5, LATGALES PRIEKŠPILSĒTA, RĪGA, LV-1019

### Full time studies - 4 years - english

Study type and form	Full time studies
Duration in full years	4
Duration in month	0

Language	<i>english</i>
Amount (CP)	<i>160</i>
Admission requirements (in English)	<i>secondary education, English at least B2 level</i>
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	<i>Professional bachelor degree in computer science</i>
Qualification to be obtained (in english)	<i>Programming Engineer</i>

### Places of implementation

Place name	City	Address
EKA University of Applied Sciences	RĪGA	LOMONOSOVA IELA 1 k-5, LATGALES PRIEKŠPILSĒTA, RĪGA, LV-1019

### Part time studies - 4 years, 6 months - latvian

Study type and form	<i>Part time studies</i>
Duration in full years	<i>4</i>
Duration in month	<i>6</i>
Language	<i>latvian</i>
Amount (CP)	<i>160</i>
Admission requirements (in English)	<i>Secondary education</i>
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	<i>Professional bachelor degree in computer science</i>
Qualification to be obtained (in english)	<i>Programming Engineer</i>

### Places of implementation

Place name	City	Address
EKA University of Applied Sciences	RĪGA	LOMONOSOVA IELA 1 k-5, LATGALES PRIEKŠPILSĒTA, RĪGA, LV-1019

### Part time extramural studies distance education - 4 years, 6 months - latvian

Study type and form	<i>Part time extramural studies distance education</i>
Duration in full years	<i>4</i>
Duration in month	<i>6</i>
Language	<i>latvian</i>
Amount (CP)	<i>160</i>
Admission requirements (in English)	<i>secondary education</i>
Degree to be acquired or professional qualification, or degree to be acquired and professional qualification (in english)	<i>Professional bachelor degree in computer science</i>
Qualification to be obtained (in english)	<i>Programming Engineer</i>

### Places of implementation

Place name	City	Address
EKA University of Applied Sciences	RĪGA	LOMONOSOVA IELA 1 k-5, LATGALES PRIEKŠPILSĒTA, RĪGA, LV-1019

## **3.1. Indicators Describing the Study Programme**

**3.1.1. Description and analysis of changes in the parameters of the study programme made since the issuance of the previous accreditation form of the study field or issuance of the study programme license, if the study programme is not included on the accreditation form of the study field, including changes planned within the evaluation procedure of the study field evaluation procedure.**

During the reporting period, changes were made in the formulation of the aim, tasks and study results to be achieved in the study programme. These changes have been made due to changes in the content of the study programme and implementation of the study process, as well as taking into account the requirements of the qualification framework.

Changes in the study plan were made by taking into account students and graduates recommendations (see p.2.2.2. of the report).

**3.1.2. Analysis and assessment of the study programme compliance with the study field. Analysis of the interrelation between the code of the study programme, the degree, professional qualification/professional qualification requirements or the degree and professional qualification to be acquired, the aims, objectives, learning outcomes, and the admission requirements. Description of the duration and scope of the implementation of the study programme (including different options of the study programme implementation) and evaluation of its usefulness.**

The name of the study programme is "Information Technologies". The aim of the study programme is to prepare specialists – programming engineers for professional activities in the field of information technologies, whose knowledge, skills and abilities correspond to the requirements of the modern labour market, who know and use programming languages, and are able to solve practical problems in the ICT sector. Within the framework of the programme, knowledge of the principles, methods and regularities of computer science in the field of IT is provided. The study programme includes relevant study courses, e.g. "Programming" "Data Structures and Algorithms", "Programming Engineering", "Fundamentals of System Modelling", "Artificial Intelligence", etc.

The expected learning outcomes of the study programme are based on the knowledge, skills and competences defined in the Latvian Qualification Framework level 6.

Upon graduation from the study programme, the student obtains a diploma of professional bachelor education and professional qualification "Programming Engineer". The awarded qualification provides for the acquisition of the necessary knowledge, skills and competences, which are ensured by the study programme to be assessed. For example, the profession standard mentions a number of tasks (e.g., be able to code, be able to construct algorithms, be able to test, debug, maintain and import software, be able to design a system, be able to prepare usage documentation, be able to perform analysis, etc.), for the performance of which the necessary knowledge and skills are included in the content of the study programme and correspond to the title of the study programme "Information Technologies".

The requirements for admission are set in the EKA Admission rules and are based on regulatory requirements. An applicant who has successful assessment of secondary education and the document certifying it, who approves knowledge in the official language and a foreign language (e.g. successful completion of centralised exams), is capable of studying in a bachelor degree programme. His/ her background at the level of the previous education, the motivation to obtain higher education and the organisation of the study process at EKA are able to ensure the achievement of study results.

### **3.1.3. Economic and/ or social substantiation of the study programme, analysis of graduates' employment.**

Demand in the labour market, both now and in the future perspective, is mainly focused on a highly qualified and professionally educated labour force. As indicated by the Ministry of Economics (EM) in its Information Report on medium and long-term labour market forecasts, people with higher levels of education are less at risk of unemployment. The unemployment rate of the population with higher education in 2021 was 4.6%. The lowest unemployment rate among the population with higher education was recorded in the thematic group on natural sciences, mathematics and information technologies and in the thematic group on health care and social welfare. In turn, the highest unemployment rate was observed among the population having higher education in the thematic group of humanities and arts.

The information report of the Ministry of Economic Affairs on the labour market in medium-and long-term forecasts in 2022 says that the demand for professionals in the ICT sector is one of the largest, exceeding the offer (Ministry of Economics, 2022).

As the existing structure of higher education supply remains, the most significant labour shortfall in the higher education group is expected to be for specialists with education in the fields of engineering, natural sciences and ICT. The shortage of specialists of the corresponding qualifications by 2030 could exceed 9 thousand specialists, mainly in such areas as computer science, architecture and construction, in physical and engineering sciences.

Of the core sectors of the economy, one of the fastest growth in the target scenario, both in the medium and long term, is for information and communication services. This is due to the ever-increasing demand for digitization of production and service processes, as well as global trends in the development of the IT industry.

Labour demand forecasts show an increase in demand for a number of specialists, including information technology specialists, both in the near future and in 2027.

As the existing structure of higher education supply remains, the most significant labour shortfall in the higher education group is expected to be for specialists with education in the fields of engineering, natural sciences and ICT. The shortage of specialists of the corresponding qualifications by 2027 could exceed 14 thousand specialists, mainly in such areas as computer science, architecture and construction, in physical and engineering sciences.

The demand for highly skilled labour force has been boosted by the COVID-19 pandemic, with changing forms of work and more and more technologies entering the labour market. Compared to 2019, in 2021 in higher qualification professions there were 6.1 thousand more employed (increase of 1.6%). In general, during the Covid-19 crisis (in 2021, compared to 2019), the sharpest increase in the number of employed persons in all occupational groups was recorded in information and

communication services and electricity, but the sharpest drop - in financial and insurance activities and arts, entertainment and recreation. Technology entry into the labour market and automation of jobs have had the greatest impact on middle - and low-skilled workers.

**3.1.4. Statistical data on the students of the respective study programme, the dynamics of the number of the students, and the factors affecting the changes to the number of the students. The analysis shall be broken down into different study forms, types, and languages.**

The implementation of the study programme "Information Technologies" was started in Latvian in 2015. In 2018/2019 academic year implementation of the programme in English started. By analysing the data on students in the reporting period, an increase in the total number of students in part-time studies is observed, incl. distance learning, from 36 students to 110. This is explained by EKA's development strategy and increased visibility and the offer of a part-time form of study and a form of distance learning. The form of distance learning studies became especially in demand during the Covid-19 pandemic. Currently, several students choose this particular form of study and, as a result, the number of students in these groups has increased.

The number of students enrolled in part-time studies fluctuates on average, enrolling from 10 to 20 people in a group. In the 2022/2023 academic year, 21 people were enrolled. The total number of students in the programme in recent years ranges from 100 to 110 students. At the beginning of the 2022/2023 academic year, 106 students are studying in the programme.

The drop-out rate of students in the study programme is on average 24%. The most common reasons for drop-out are lack of finances, change of place of residence (moving abroad) and the choice of another profession, family circumstances. During the COVID-19 pandemic, dropouts increased, which is due to financial difficulties and the inability to pay for studies. In groups of foreign students, one of the reasons for the dropout was also related to the pandemic: students drove home because of difficulties in living with restrictions without families.

The number of foreign enrolled students in full-time studies fluctuates on average, enrolling from 5 people in a group. The low number of admissions is related to the difficulties of preparing documents, the restrictions of Covid-19 and insufficient preparation of the applicants for the entrance exam (test and interview in English). Despite all the difficulties, the number of students enrolled is gradually increasing.

Every year, some students return to the university (on average 2-3 people) and resume their studies at later stages of studies, having previously carried out the recognition of the study results achieved in the previous stage of studies.

**Table.** Total number of students

Year of study	Total number of students in the programme		
	Full-time	Part-time	Distance learning
2017/ 2018	12	30	6
2018/ 2019	14	35	21

2019/ 2020	11	39	26
2020/ 2021	16	44	49
2021/ 2022	18	34	58
2022/ 2023	22	33	51

**3.1.5. Substantiation of the development of the joint study programme and description and evaluation of the choice of partner universities, including information on the development and implementation of the joint study programme (if applicable).**

## **3.2. The Content of Studies and Implementation Thereof**

**3.2.1. Analysis of the content of the study programme. Assessment of the interrelation between the information included in the study courses/ modules, the intended learning outcomes, the set aims and other indicators with the aims of the study course/ module and the aims and intended outcomes of the study programme. Assessment of the relevance of the content of the study courses/ modules and compliance with the needs of the relevant industry, labour market and with the trends in science on how and whether the content of the study courses/ modules is updated in line with the development trends of the relevant industry, labour market, and science.**

The content of the study courses is updated on a regular basis in accordance with the guidelines of the development and updating of the EKA study course descriptions. The guidelines set out the order who, when and how is doing it. Lecturers review not only the content of their courses, but also the content of independent work, the methods of teaching and evaluation, and the bibliography.

The teaching staff of the study programme follows the current events, incl. attending relevant in-service events, as well as working in the industry on a daily basis. For example, M. Pinnis, docent of the study courses "Artificial Intelligence", "Fundamentals of Systems Modelling", is a doctor of computer science and a leading researcher of Tilde company, who, every year, improves his qualification by participating in conferences and seminars (AMTA, EMNLP, etc.). E.Treiguts, docent and lecturer of the study courses "WEB Programming" and "Mobile Application Development for iOS", is an iOS platform professional and application software developer and his research interests are also related to the implementation of the information technology programme; docent, lecturer of the study course "Higher Mathematics" P.Morevs is a practicing mathematician and WEB programmer. In addition, the teaching staff participates in various practical and scientific conferences, where they gain knowledge about current events in the ICT sector.

By analysing the topicalities of the labour market, it can be concluded that nowadays there is a demand for specialists who, in addition to narrow specialized knowledge (IT hard skills), would also

require knowledge of related issues (IT soft skills), e.g. law, communication, entrepreneurship, as well as professional knowledge of foreign languages. Employers nowadays require skills such as the ability to analyse, think critically and argue in a reasoned manner. Several study courses (for example, "Research Work Organization", "Professional Foreign Language", "E-Commerce", "Presentation Skills", "Legal Framework of Entrepreneurship", "Fundamentals of Management Sciences", etc.), as well as internships and the development of studies and final theses are aimed at, inter alia, the development of these skills.

During their studies, students acquire the necessary knowledge and acquire the skills that are necessary for programming engineers today (for example, "E-commerce", "Mobile application development", "Mathematical logic", "WEB programming", "Database technologies", "Software engineering", "Programming languages", etc.). This is also evidenced by the assessment submitted by the internship and employers, as well as the assessment of graduates received and their employment.

The content of study courses is designed so that their content does not overlap with other courses and ensures the continuity of knowledge.

In developing or updating the description of the course of study, teachers must take into account the objectives of the study programme and the outcomes achieved. In defining the description of the study course and the learning outcomes, it is necessary to ensure that they contribute to the achievement of the outcomes of the study programme.

Study course descriptions are developed by the responsible course lecturers or other teacher in the study programme, whose name appears as the author of the course description. The teaching staff collaborates in the development of study results, content, and description of independent work and assessment of results.

The Director of the study programme shall verify the consistency of the outcomes of the study courses with the outcomes of the study programme, mapping it. For example, with the introduction of the study course "Programming Languages", the director of the study programme informed the teaching staff about the results to be achieved by the programme, which should also be achieved by implementing the study course. When preparing the study course description and formulating the results to be achieved by the course, the teaching staff focuses both on achieving the aim of the course and on ensuring the results of the programme.

Analysing the descriptions of the study course of the study programme "Information Technologies", it can be concluded that their results ensure the achievement of the results of the study programme. For example, several industry study courses (Programming, WEB Programming, Computer Networks, Fundamentals of System Modelling, Software Development Technologies, Programming Languages, Project Management, etc.) provide the necessary knowledge in the profession, as well as skills to work in a team, discuss and analyse information. Defined objectives and tasks focus on acquiring knowledge and skills in the ICT industry, taking into account qualification requirements for Level 6.

Every year there is an expanded meeting of the Study Council, where the results of the programme, its content, identified shortcomings are analysed. During the meeting, opportunities for improvement and its integration into the study programme are examined.

**3.2.2. In the case of master's and doctoral study programmes, specify and provide the justification as to whether the degrees are awarded in view of the developments and findings in the field of science or artistic creation. In the case of a doctoral study**

**programme, provide a description of the main research roadmaps and the impact of the study programme on research and other education levels (if applicable).**

**3.2.3. Assessment of the study programme including the study course/ module implementation methods by indicating what the methods are, and how they contribute to the achievement of the learning outcomes of the study courses and the aims of the study programme. In the case of a joint study programme, or in case the study programme is implemented in a foreign language or in the form of distance learning, describe in detail the methods used to deliver such a study programme. Provide an explanation of how the student-centred principles are taken into account in the implementation of the study process.**

The study process of the study programme is divided into: theoretical knowledge in person, incl. via e-environment, independent studies, and the practical acquisition of skills during studying and individual practice. In person lectures are held in an interactive environment, conducting lectures (incl. using digital technologies online in the case of foreign teachers), illustrating them with presentations, asking questions to students (in seminars) and encouraging students to discuss the topic. At the end of each semester, a survey of students is conducted on the quality of studies and the performance of the teaching staff in order to find out the opinion of students and recommendations for improving the study process.

In the practical course section, students with their practical participation acquire only the skills acquired in practical activities. Practical classes are based on the knowledge gained during theoretical classes, thus strengthening the theoretical knowledge base and supplementing professionalism with practical skills. After practical work, an analysis is carried out in the form of discussions, where the student is able to identify his/ her own and other students' strengths and weaknesses, as well as identify mistakes and shortcomings made.

Independent studies are a mandatory part of the study process of the university, incl. independent work of the student within the framework of the study course, the amount of which corresponds to the credit points of the study course. This includes reading compulsory and additional literature, performing regular examinations, preparing for classes, seminars, tests and final examinations, and other types of work, according to the description of the study course.

In parallel, students are offered specialists in the professional field, with who students have the opportunity to additionally discuss current topics with specialists in a particular field, and to find out their opinion as professionals and their view of the development and direction of the process. For example, every year in September guest lectures were organized, which are conducted by IT industry professionals or EKA graduates, for example "Proof IT" Ltd. member of the board, Jānis Ekmanis.

The realization of the study programme takes place using various methods that allow to ensure the achievement of study results and promote the organization of a student-centred study process, for example: lectures, seminars, discussions, group work, independent work, practical classes. As one of the methods for monitoring the pedagogical activities of the teaching staff, the hospitiation (visiting) of classes is used. Seminars on assessment methods, improvement of the study course

content and teaching methods have been organised for the teaching staff, for example, methodological conferences are held every year, methodological seminars are organised every year (for example, the 2022/2023 series of seminars on technology-enriched learning process in cooperation with RSU).

Students who show good results in creative and research activities, for example, when developing a study or project paper, are provided with opportunities to show the results of their work at the Student Conference and publish the research results in the Student Papers Collection.

In order to promote the practical skills of students, an opportunity has been provided to engage in the development of a solution to the problem situation of employers. For example, students participated in the project "Innovation grants for students in the interdisciplinary fields of art, culture, economics and IT - MaKE IT", developing IT solutions.

The use of various methods allows students not only to gain professional knowledge, but also to work practically in projects and research, thereby developing professional skills.

The basic principles of education assessment are laid down in the Study Regulations (available on Moodle - "EKA Administration").

The criterion for evaluating study results is a mark in the 10-point system. For the assessment of knowledge, the teaching staff uses several forms, for example: tests, quizzes, development and defence of study papers, development and defence of independent works, development and defence of work performed by the group, participation in scientific research work under the supervision of lecturers, performance of tests, examinations. The study results achieved by students are evaluated not only in the final examination of the study course - examination, but also in midterm examinations. If the student has not fulfilled the requirements for the acquisition of the study course and the midterm examinations, then the teaching staff has the right not to admit the student to the final examination until the fulfilment of the requirements. Lecturers inform students about the results achieved in face-to-face consultations, by email or by posting ratings and comments on Moodle.

The student has the right to submit an appeal or complaint in relation to the study and knowledge assessment process.

The assessment principles and criteria are described in the description of each study course, which are available in EKA e-environment. The study course descriptions also mention the possibilities of consultation in case the student did not understand the study content and additional support is needed. The teaching staff, starting work with students, introduces students to the requirements of the study course and to the system of assessment of knowledge and skills.

In distance learning, similar methods have been used in the organization of the study process as for full-time and part-time students, using the capabilities of the EKA Video Conferencing System. The system allows not only to conduct lectures online, but also to organize discussions, seminars and practical classes and actively involve students using various digital tools, such as the possibilities built into the system to conduct surveys, divide students into groups and co-collaborative boards, as well as the "Share screen" function.

Distance education students, as part-time students, are required to perform independent work, descriptions of which and deadlines for submission are available on Moodle. Lecture materials and other information necessary for studies are also available there. Lecturers and students can communicate via the Moodle forum, via email, as well as during remote or face-to-face consultations.

Distance learning students who wish to engage in research or projects are provided with similar

opportunities as part-time students.

Academic and administrative staff follow the requirements and results of the assessment of students' knowledge. After the end of the final examination of the relevant study course and/or module or the end of the academic year the Study Council discusses the results and methods of student assessment, which serve as a basis for the improvement of the study process.

**3.2.4. If the study programme envisages an internship, describe the internship opportunities offered to students, provision and work organization, including whether the higher education institution/ college helps students to find an internship place. If the study programme is implemented in a foreign language, provide information on how internship opportunities are provided in a foreign language, including for foreign students. To provide analysis and evaluation of the connection of the tasks set for students during the internship included in the study programme with the learning outcomes of the study programme (if applicable).**

Student internships in companies and institutions are a mandatory stage of the professional study programme. The internship is designed to consolidate the acquired theoretical knowledge and improve practical skills in the profession of a programming engineer in relation to the development, implementation and maintenance of software. After the internship, students should write a review of the internship and defend it.

Students choose internships in accordance with the internship programme. EKA supports students with the provision of internships using the possibilities of the concluded collaboration agreements. Working students can complete the internship programme at their workplace if the job responsibilities are related to the tasks included in the internship programme.

When performing internship tasks, students have the opportunity to use EKA's digital laboratory, library and other computer classes. In the semester in which the internship is scheduled, a consultation is held with the programme director on the selection of the internship task, the preparation of the content of the internship report and the approval of the place of internship.

For the preparation of the internship report, guidelines and content have been developed, which are available in the documents "Internship programme and tasks" and in the internship regulations.

The student has the opportunity to choose internship assignments from some of the proposed options so that s/ he can demonstrate his programming skills during the internship. Tasks include database development, application development or improvement, website development, information system prototype development. The aim of the task is to show the student's programming skills.

For international students, internships are provided by EKA's collaboration partner LATA, as well as the programme director helps students find internships.

The internship is divided into three parts: practice I (dating), internship II (basic practice) and practice III (programming) or undergraduate practice. When performing internship tasks, the student has two internship supervisors: in the company and EKA's. Internship supervisors help the student understand the essence of the internship tasks and direct the student to the correct execution of these tasks. The internship supervisor EKA also provides advice on general issues of internship organization and defence of the internship report.

The completion of the internship programme and the tasks included in it allows to ensure skills and competences in the field of ICT, as well as the development of analytical thinking, which is included in the study results to be achieved by the study programme. The internship tasks are closely related to the results of the IT programme and its execution helps students to achieve them, for example: is able to use and apply information technologies in the development of computer systems, including the development of software and databases and the creation of computer networks, is able to plan and ensure the operation of the company's information technology system, is able to defend his/ her point of view and reasonably discuss current events in the professional field, is able to organize his/ her independent work, able to obtain, analyse, evaluate and systematize information, find solutions, use them in decision-making in professional activities.

### **3.2.5. Evaluation and description of the promotion opportunities and the promotion process provided to the students of the doctoral study programme (if applicable).**

### **3.2.6. Analysis and assessment of the topics of the final theses of the students, their relevance in the respective field, including the labour market, and the marks of the final theses.**

The final works of the students of the programme "Information Technologies" are focused on current events in the IT industry, as well as offer solutions for individual organizations of the IT industry. The sample themes for the Bachelor thesis are drawn up on the basis of both teachers' experience and employers' recommendations.

Every semester, within the framework of the IT programme, a meeting of the IT Council is held, where the topics of the final works are improved and analysed. The IT Council meeting is attended by representatives from the association and employers. Approval of the topics of the final works is carried out during colloquia. At the colloquium, the commission assesses the relevance and importance of the topics for both the IT industry and the company for which the topic is intended.

The topics of the bachelor thesis are relevant in the labour market, because students offer modern IT solutions for existing companies. E.g.:

1. "Development of automated testing scripts for a web application". The work was assessed with the mark "with distinction". After defending this product, the Latvian company Latvijas Pasts started to use it.
2. "Development and implementation of WEB components in the company". After defending the work, the product was used in one of the commercial banks of Latvia.
3. "Development of a draft app for defection acts for construction supervision for companies.
4. "Development of an electronic sign-up app for beauty companies. The product prototype operation was tested in a real-world environment.
5. "Development of a study management information system for an educational institution. After the defence, the solution was implemented in one of the educational institutions of Latvia.

The bachelor theses are evaluated by independent reviewers - representatives of industries and

the IT association (e.g. LATA). In 6 years, not a single disappointing rating has been received.

The graduation theses are defended in the presence of the State Examination Commission, which assess both the topicality and the solutions offered, as well as the student's knowledge and presentation skills. The commission is composed of representatives of the state, local governments and private companies from the ICT sector, as well as participants with a doctoral degree and EKA elected teaching staff. The Commission has appreciated both the quality of the theses and the wide range of topics and solutions that strengthen individual IT organisations. During the reporting period, 2 bachelor theses have been assessed with the mark "with distinction".

### **3.3. Resources and Provision of the Study Programme**

#### **3.3.1. Assessment of the compliance of the resources and provision (study provision, scientific support (if applicable), informative provision (including libraries), material and technical provision, and financial provision) with the conditions for the implementation of the study programme and the learning outcomes to be achieved by providing the respective examples.**

The resources of the study programme are described in Part II, Chapter 3 p. 2.3.1.- 2.3.3.

For the implementation of the study direction, specialized software is also provided:

- Programmes "My SQL ", "Cassandra DB" , for database modelling;
- Programme "Eclipse", for software development;
- Programme "Android Studio" , for the development of mobile applications for the Android platform;
- Program "X-code", for the development of mobile applications for the iOS platform;
- Programmes "Notepad+", "Xampp", "Visual Studio Code" for the development of websites and management systems;
- Programme "Dev C++", for programming on the C++ language;
- Programmes "Visual studio", "Code Blocks", for object-oriented and visual programming;
- Programmes "Gimp", "Inkscape", for computer graphics and image processing
- Programmes "Visual paradigm for UML", "Modelo", for system modelling;
- The programme "Cisco packet tracer", "Wireshark", for testing and modelling computer networks.

For the needs of the study process, an e-environment is available: EKA website, EKA application (available for download on the AppStore and Play Market) , Moodle and BigBlue Button, E-Nexus

#### **3.3.2. Assessment of the study provision and scientific base support, including the resources provided within the framework of cooperation with other science institutes and higher education institutions (applicable to doctoral study programmes) (if applicable).**

**3.3.3. Indicate data on the available funding for the corresponding study programme, its funding sources and their use for the development of the study programme. Provide information on the costs per one student within this study programme, indicating the items included in the cost calculation and the percentage distribution of funding between the specified items. The minimum number of students in the study programme in order to ensure the profitability of the study programme (indicating separately the information on each language, type and form of the study programme implementation).**

The funding of the study programme is sufficient, consisting of both the revenue from the study fee and the financing of projects. The budget of the programme includes funds for the remuneration and upskilling of staff, maintenance and development of infrastructure, the purchase of information resources, research and creative activities, the implementation of projects, participation in associations, and also expenses necessary for attracting students.

The cost of the place of study amounted to 2423.21 euros, if there are 20 students in the group. Now that inflation has risen significantly, the cost of studying could rise by a minimum of another 20%. Taking into account the results of the KNPG study: the cost of the place of study could increase by at least another 50%. The minimum required number of students in the programme is 60 students for programmes profitability. In the academic year 2022/2023, 106 students are studying in the programme.

In order to ensure the profitability of the study programme and to maintain its competitiveness, project funding opportunities have been used, the opportunities of the Erasmus+ programme (incl. by participating in international projects). In addition, it is planned to increase the tuition fee from 2023/2024, evaluating the planned amount of revenue and expenditure when planning the budget for the 2023/2024 academic year.

## **3.4. Teaching Staff**

**3.4.1. Assessment of the compliance of the qualification of the teaching staff members (academic staff members, visiting professors, visiting associate professors, visiting docents, visiting lecturers, and visiting assistants) involved in the implementation of the study programme with the conditions for the implementation of the study programme and the provisions set out in the respective regulatory enactments. Provide information on how the qualification of the teaching staff members contributes to the achievement of the learning outcomes.**

The qualification of lecturers employed in the study programme "Information Technologies" conforms to the requirements of regulatory enactments and the implementation of the strategic goals and tasks of the EKA University of Applied Sciences, because:

- In total, 24 teaching staff are involved in the implementation of the study direction, incl. 14 or 58.33% of those employed in the main job and 10 or 41.67% are guest lecturers;
- 62 CP or 53.44% is provided by those working in the main job, the remaining 54 CP or

46.56% is provided by guest lecturers (excluding free elective study courses, study papers and supervision of bachelor theses);

- 6 doctors of science (5 of them are elected to EKA) and 19 teaching staff with a master's degree (8 of them are elected to the EKA main job) participate in the implementation of the study direction;
- 1 professor (1 is an EKA professor), 1 associate professor (1 is an EKA associate professor), 9 docents (9 of them are EKA docents), 2 lecturers (2 of them are EKA lecturers) are involved in the implementation of the study direction;

The teaching staff involved in the programme, who teach professional study courses are professionals in industries with pedagogical experience, which allows to achieve the planned study results, ensuring the acquisition of the necessary knowledge and skills in the field of information technologies (programming). In turn, theoretical courses in the field are taught by the teaching staff who have both pedagogical, research and practical experience, which also ensures the achievement of the programme results related to the development of knowledge and skills in other areas, for example, development of communication skills, knowledge in the field of law and management sciences, etc.

In addition, the teaching staff increases their qualifications both in the professional field and in the pedagogical and research fields. This, in turn, ensures the offer of current study content in study courses and the use of appropriate study methods.

The academic staff have language skills, which corresponds to required level for teaching in Latvian and English.

### **3.4.2. Analysis and assessment of the changes to the composition of the teaching staff over the reporting period and their impact on the study quality.**

During the reporting period, significant changes in the composition of the teaching staff have been made in the study programme "Information Technologies".

Changes in the composition of teaching staff can be observed during the reporting period, mostly teaching staff were elected to academic positions at the EKA. The following teaching staff were elected: A.Liepiņš, P.Morevs, E.Treiguts. The greatest changes in the composition of the teaching staff were associated with a change in the place of residence of docent D. Finaškin (moved to another country), study courses were divided between existing teaching staff, and a new teaching staff member M.Žigunov was also invited.

In addition, during the reporting period, a new study course "Legal Framework for Entrepreneurship" was created, which replaces the previously two study courses (Exchange of Business Information, IT Industry Law Standards) . The course is designed for both Latvian and foreign students. Currently, the course is conducted by one faculty member, so far there were two teachers for the Latvian flow and two more for the English flow. Such changes ensure the implementation of the course according to plan and reduce the risk of not conducting the course in a certain semester.

Taking into account that the programme is implemented in two languages, the majority of teaching staff conduct their study course in both Latvian and English. Such a division ensures effective improvement of the course and changes in the course content if necessary. For example, the study courses "Programming" , "Software Engineering" , "Database Technologies I" are conducted by

docent A.Liepiņš, both for Latvian flow students and English flow students.

The study course "Development of mobile applications" during the reporting period was divided into two parts, creating two separate courses - "Mobile application development in iOS", conducted by docent E.Treiguts and "Mobile application development for Android", conducted by lecturer M.Žigunovs. Such division provided a more convenient assessment and acquisition of the course for students. Analysing the changes in the teaching staff during the reporting period, a table was created with examples of some courses (see below).

**Table.** Changes in academic staff

<b>Study course title</b>	<b>At the beginning of the period</b>	<b>At the end of the period</b>	<b>Reason</b>
<b>Industry subjects</b>			
Operating systems, Structure and architecture of computer systems	Mg.sc.educ., Mg.sc.env., guest lecturer, A.Gabranov	Mg.math., docent P.Morevs	Guest lecturer A. Gabranov due to the main job cannot teach on weekdays, and also could not ensure the implementation of courses in English
Computer Networks I, Computer Networks II	Dr.sc.ing., docent, J.Asmuss	Mg.paed., guest lecturer R.Glaudiņš	Docent J. Asmuss stopped working due to increasing the load on the main job
Software development project management		Mg.sc.ing, guest prof. T.Tambovceva	
Computer graphics and image processing basics	Mg.sc.comp., viesdoc.guest lecturer L.Ivanova	Mg.sc.ing., guest lecturer M.Zhigunov	Guest lecturer L.Ivanova,stopped working at EKA,for family reasons
Database Technologies I	Mg.sc.ing., lecturer, D.Finaškin	Mg.sc.comp., docent, A.Liepiņš	Lecturer D.Finaškin, stopped giving lectures, change of place of residence (country)
Database technologies II	Mg.sc.ing., lecturer, D.Finaškin	Mg.sc.ing., guest lecturer M.Zhigunov	
Data structures and algorithms	Mg.sc.ing., lecturer, D.Finaškin	Mg.math., docent P.Morevs	
Software engineering,Software development technologies	Mg.sc.ing., lecturer K.Sjomkane,	Mg.sc.comp., docent, A.Liepiņš	Lecturer K.Sjomkane had an unsatisfactory assessment on the part of students

<b>Study course title</b>	<b>At the beginning of the period</b>	<b>At the end of the period</b>	<b>Reason</b>
Information systems safety	Mg.sc.educ., Mg.sc.env., guest lecturer, A.Gabranov	n/a	The courses were combined and resulted in a course on "Information Systems, Security and Administration"
Management information systems	Mg.sc.ing, guest prof. T.Tambovceva	n/a	
Security and administration of information systems	n/a	Mg.sc.ing., guest lecturer M.Žigunov	
Mobile application development	Mg.phys.guest lecturer E. Treiguts	Mg.phys.docents E.Treiguts,Mg.sc.ing., guest lecturer M.Žigunov	The exchange rate for the reporting period was divided into two parts : iOS and Android platforms
Information systems design	Mg.sc.ing., lecturer, D.Finaškins	n/a	The course was replaced by the course Programming Languages
Programming languages	n/a	Mg.sc.ing, guest lecturer M.Žigunovs	The course was established at the end of the period
<b>General subjects</b>			
Higher mathematics	Mg.sc.educ., guest lecturer I.Neilande	Mg.math., docent P.Morevs	Guest lecturer I.Neilande stopped working as a lecturer, retirement age
Management basics	Mg.psyh., docent J.Bjerne	Dr.oec., docent K.Šteibergs	Docent J.Bjerne stopped working due to health
Research organisation	Mg.psyh., docent J.Bjerne	Mg.sc.soc., guest lecturer Rita Burceva	Docent J.Bjerne stopped working due to health
Fundamentals of IT law	Mg. iur., guest lecturer A.Leitane	n/a	The courses were combined with the result that the course "Legal Framework for Entrepreneurship" was created
Business exchange of information	Mg.iur., lecturer N. Verina	n/a	
Regulatory frameworks of Business	n/a	Mg.iur., Mg.oec., guest lecturer T.Džugleja	

Changes in the composition of the academic staff are related to the results of the assessment of

students and an increase in the workload of teachers in the main job, as well as due to health and family reasons. Improvement, combination and modification of courses was one of the recommendations of experts after accreditation in 2017.

**3.4.3. Information on the number of the scientific publications of the academic staff members, involved in the implementation of doctoral study programme, as published during the reporting period by listing the most significant publications published in Scopus or WoS CC indexed journals. As for the social sciences, humanitarian sciences, and the science of art, the scientific publications published in ERIH+ indexed journals or peer-reviewed monographs may be additionally specified. Information on the teaching staff included in the database of experts of the Latvian Council of Science in the relevant field of science (total number, name of the lecturer, field of science in which the teaching staff has the status of an expert and expiration date of the Latvian Council of Science expert) (if applicable).**

**3.4.4. Information on the participation of the academic staff, involved in the implementation of the doctoral study programme, in scientific projects as project managers or prime contractors/ subproject managers/ leading researchers by specifying the name of the relevant project, as well as the source and the amount of the funding. Provide information on the reporting period (if applicable).**

**3.4.5. Assessment of the cooperation between the teaching staff members by specifying the mechanisms used to promote the cooperation and ensure the interrelation between the study programme and study courses/ modules. Specify also the proportion of the number of the students and the teaching staff within the study programme (at the moment of the submission of the Self-Assessment Report).**

The core of the teaching staff of the study programme "Information Technologies" consists of lecturers of study courses in the field: A.Liepiņš, M.Žigunovs, M.Pinnis, E.Treiguts, P.Morevs, R.Glaudiņš and teachers of general education courses I.Miļeviča, T.Džugleja, M.Anspoka, M.Pužuls, R.Burceva, and L.Turuševa. The director of the programme J. Radionovs discusses with the teaching staff the content of the programme and ensuring interconnection. At least twice a year, meetings (IT Council meeting) are organized, during which the results of the survey of students, the results of the examination of e-study courses, the topicality of the final theses and topics of study papers, etc. are discussed.

The teaching staff of the study programme collaborates in preparing study course descriptions, creating e-courses in the e-environment, working in research directions and projects. For example, if several teachers conduct one study course for different flows in Latvian and English, then they coordinate the course content, course acquisition requirements, bibliographic sources and

description of independent work, as well as placement of materials in the e-environment. To create an e-course in e-environment (Moodle), it is necessary to follow the course template, which is specially designed for cases where the course is conducted by several teachers.

E.g.: Lecturers P.Morevs and E.Treiguts prepare course descriptions of this type for courses – WEB Programming I, II. Lecturers M.Žigunovs and R.Glaudins prepare course descriptions of this type for courses – Computer networks I, II.

There is also other active collaboration between the teaching staff of the programme, for example, docent P.Morevs, the teacher of the study course "Higher Mathematics", after agreeing with the docent , teacher of the study course "Artificial Intelligence" M.Pinnis, supplemented the course content with topics that will later help students solve tasks within the course.

Docent A. Liepiņš and guest lecturer M. Žigunovs jointly develop and improve the Study courses "Database Technologies I" and "Database Technologies II".

Another example is collaboration for the involvement of students in research work. At the beginning of the study year, topicalities have been discussed in relation to EKA's priority research directions, according to which the model topics of studies and final works have been supplemented. The lecturer of the study course "Organisation of Research Work" (R.Burceva), based on the shortcomings identified in the previous year in the development of works, focuses the attention of students on the conduct of research and the development of studies and final works in accordance with the requirements of EKA (Regulations on the Development and Defence of Study and Project Papers and Bachelor Thesis development and defence). Lecturers who supervise study papers and bachelor theses, working with students, invite them to participate in the student conference and publish the results of their research.

The proportion of students/teaching staff in the study programme is as follows:

- Full-time study form - on average, two students per one teacher or three students per one teacher working in basic work.
- Part-time study form - on average, two students per one teacher or three students per one teacher employed in basic work.
- Form of distance learning studies - on average three students per one teacher or five students per one teacher working in basic work.

# Annexes

III - Description of the Study Programme - 3.1. Indicators Describing the Study Programme		
Sample of the diploma and its supplement to be issued for completing the study programme	20_Annex_Diploma.zip	20_pielikums_diploma_paraugs.zip
For academic study programmes - Opinion of the Council of Higher Education in accordance with Section 55, Paragraph two of the Law on Higher Education Institutions (if applicable)		
Compliance of the joint study programme with the provisions of the Law on Higher Education Institutions (table) (if applicable)		
Statistics on the students in the reporting period	22_Annex_Statistics_students.docx	22_pielikums_Statistika_studejosie.docx
III - Description of the Study Programme - 3.2. The Content of Studies and Implementation Thereof		
Compliance with the study programme with the State Education Standard	23_Annex_ICT_Compliance_State_standart.docx	23_Pielikums_IKT_Atbilstiba_valsts_standarts.docx
Compliance of the qualification to be acquired upon completion of the study programme with the professional standard or the requirements for professional qualification (if applicable)	24_Annex_ICT_Compliance_profession_standart.docx	24_Pielikums_IKT_Atbilstiba_profesijas_standartam.docx
Compliance of the study programme with the specific regulatory framework applicable to the relevant field (if applicable)		
Mapping of the study courses/ modules for the achievement of the learning outcomes of the study programme	25_Annex_Mapping_ICT.xlsx	25_pielikums_Kartejums_IKT_.xlsx
The curriculum of the study programme (for each type and form of the implementation of the study programme)	27_Annex_Study_plan.zip	27_pielikums_Studiju_plans.zip
Descriptions of the study courses/ modules	26_Annex_SKA_IKT_EN_2022.zip	26_pielikums_SKA_IKT_LV_2022.zip
Description of the organisation of the internship of the students (if applicable)	21_Annex_EKA_Internship_regulations.pdf	21_pielikums_EKA_Prakses_nolikums.pdf
III - Description of the Study Programme - 3.4. Teaching Staff		
Confirmation that the academic staff of the doctoral study programme includes not less than five doctors, of which at least three are experts approved by the Latvian Council of Science in the branch or sub-branch of science in which the study programme intends to award a scientific degree (if applicable)		
Confirmation that the academic staff of the academic study programme complies with the requirements specified in Section 55, Paragraph one, Clause 3 of the Law on Higher Education Institutions (if applicable)		