Turība
Biznesa augstskola

Second cycle professional higher education study program

INFORMATION TECHNOLOGY

Riga, 2025

TABLE OF CONTENTS

1. COMPLIANCE OF THE STUDY PROGRAM WITH THE FIELD OF STUDY

1.1. Justification for the creation of the study program

The information and communication technology (ICT) sector is showing extremely rapid growth and great potential. According to the EU assessment (*High-Tech Leadership Skills for Europe. Towards an Agenda for 2020 and Beyond* , *March* , *2017* [1]) by 2020 ICT in the industry There will be a labor shortage in the EU. As reported in the assessment, up to 500,000 jobs. The European Commission has recognized this as a political problem, at least at the political level. The boundaries of the ICT field are becoming increasingly blurred. ICT professional skills such as algorithmic thinking, data analysis and programming are now useful not only for ICT companies, but in practically all sectors of the economy, including Latvia.

Since 2008, employment in the ICT services sector in Latvia has increased by 84%. In 2016, the ICT services sector employed 25.2 thousand workers, most of whom were in programming, consulting and related activities, while the number of ICT professionals working in the economy as a whole had reached 19.7 thousand.[2]

Although the ICT sector is truly promising, its potential is still not fully utilized in Latvia. ICT companies could employ even more specialists, and therefore for several years have been pointing to tension in the labor market and difficulties in finding new employees. Since Latvia has approximately 670 graduates every year, there is a very noticeable shortage of ICT specialists. A study conducted *by the Certus think tank* predicts that in order to ensure the development of the sector and meet the demand for ICT specialists in other sectors, the total number of graduates in the field of information technology (hereinafter – IT) in Latvia should be up to 3,000 per year in the coming years.

As follows from the Education Development Guidelines for 2021–2027 and, which are linked to Latvia's development planning documents, one of the priorities is defined as increasing export capacity and international competitiveness, which results in strengthening Latvia's economy and innovative activities.

The Sustainable Development Strategy of Latvia until 2030 (“Latvia 2030”), as the hierarchically highest long-term national-level plan, determines paradigm shifts in education, focusing on an education system that allows responding to competitive and demographic challenges and is a prerequisite for changing the economic model. In turn, the National Development Plan (“NDP 2027”), as the hierarchically highest medium-term national-level development planning document, determines medium-term priorities, including in the field of education and science, emphasizing the directions of action: development of competencies and development of research, innovation and higher education. Accessibility of higher education, export capacity and competitiveness are also determined among the main tasks. Implementation of the Latvian National Reform Programme (hereinafter – Progress Report on the Implementation of the Latvian NRP), which is closely related to the Latvian Stability Programme for 2022-2025 and the Latvian Recovery and Resilience Plan. The Latvian National Reform Programme (hereinafter – the Latvian NRP) and the Latvian Stability Programme, in accordance with Articles 121 and 148 of the Treaty on the Functioning of the European Union (EU), are components of the EU-level economic policy coordination and surveillance instrument (within the framework of the European Semester). The European Commission (EC) assesses the implementation of both programmes and, on this basis, comes up with proposals for recommendations to the EU Council, for example, the Latvian Information and Communication Technology Association (LIKTA) indicates in its charter that purposeful work in the development of ICT is the fastest way to the well-being of citizens and the state and a

[1]https://www.algebra.hr/wp-content/uploads/2020/11/EU-brochure_high_tech_leadership_agenda_2020_and_beyond-4.pdf
[2]https://tap.mk.gov.lv/doc/2019_07/EMAnot_030719_BP_290200_aprop.1298.docx

competitive market, setting the goal of developing and streamlining the ICT environment in Latvia.

In order to ensure an internationally recognized education system and competitiveness in the market at an international level in Latvia, it is necessary to increase the number of excellent (export-capable) study programs in EU languages (Education Development Guidelines 2021-2027). Conclusion – without creating new export- and competitiveness-oriented study programs in Latvia, including STEM (*Science, Technology, Engineering and Mathematics* – science, technology, engineering, mathematics) in the fields of education, not only will the hierarchical national-level plans not be fulfilled, but we can expect a narrowing of education exports and the choice of solvent foreign potential students to study in other EU countries. Considering the above circumstances, using its own resources, exploring the labor market and cooperation opportunities with ICT companies and other partners, the "Turība University" (hereinafter BAT) has decided to open the study direction "Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science", the second-level professional study program "Information Technologies" is planned to begin implementing BAT from the 2025/2026 academic year.

The quality of the study program and the effective learning process are ensured by three main criteria. Their choice for decision-making in the learning process is determined by the fact that they must be measurable and analyzable:

- Students.
- Learning objectives of the study program.
- Planned outcomes of the study program.

Students. Student progress knowledge, skills and competencies will be regularly updated in the context monitored to expect from students the results that are required and defined by the study objectives of the study program.

The learning objectives of the study program. They arise from and are related to the vision, mission and strategy. The study program is documented, systematically updated and periodically reviewed, in accordance with market trends and scientific research in computer science.

Planned outcomes of the study program. The outcomes to be achieved by students are documented and periodically assessed to achieve maximum student progress and compliance with the qualification and degree to be obtained.

As auxiliary criteria to support the above three main criteria, the following should be mentioned: excellent management and services for students, modern infrastructure, i.e. premises, laboratories, etc. As well as support from the university's top management.

1.1.1. Objective of the study program "Information Technologies"

To prepare professional specialists for the 7th professional qualification level of a leading programming engineer or systems analyst with in-depth knowledge and skills in computer science, software engineering, systems analysis, computer systems development, database technologies, programming languages, software development environments, as well as with the ability to participate in a software development project, fulfilling the duties of various positions (including management) and adhering to IT industry standards and professional ethics. As well as, to prepare for continuing studies at the doctoral level.

1.1.2. Tasks of the study program "Information Technologies"

In order to ensure that students are able to successfully complete the study program within the allotted time and obtain second-cycle professional higher education and the corresponding professional, academic, scientific and intellectual competencies, the following tasks are set:

1. Provide knowledge in systems analysis, as well as the design and development of information systems, database systems and intelligent systems;

2. Provide knowledge about software products, software systems and environments, as well as technologies and tools for developing application programs;

3. Provide knowledge about problem analysis, computer systems modeling and programming methods;

4. To train students in the professional use of system development tools;

5. To train students in the professional use and development of complex software products;

6. To train students in the practical use of computer systems modeling and programming methods ;

7. To provide the student with practical work experience;

8. To improve students' oral and written communication skills, as well as develop students' skills in working in a team;

9. To promote understanding of high standards of professional ethics and their observance at work.

To provide an opportunity to obtain the qualification "Leading Software Engineer" or "System Analyst" by developing a master's thesis with a project part in which the student conducts research, demonstrating the ability to connect the acquired theoretical material with practice. To promote participation in the scientific research process, motivating for further education at the doctoral level.

1.1.3. Planned (expected) study results of the study program "Information Technologies"

The results of students in the study program will be documented, and the study process will be periodically reviewed and audited, determining the following study results to be obtained by the time the student graduates from the study program:

- has acquired deep theoretical and practical knowledge in systems analysis and the design of information, databases and intellectual systems, as well as is able to analyze existing business systems and interview customers and users;
- has acquired deep theoretical and practical knowledge in programming, software development environments and systems, and application development technologies and tools;
- is able to use various systems development techniques and tools in systems analysis and modeling tasks;
- is able to develop and professionally use complex software products;
- is able to use methodologies and tools based on object-oriented, functional or logical paradigms in the development of computer systems;
- is able to independently formulate and critically analyze scientific and professional problems;
- is able to choose adequate software products, tools and methods, including artificial intelligence, for solving a problem;
- is able to organize and lead a development team using professional standards, analyze work results and propose a plan for risk mitigation;
- are able to independently improve their competences.

1.1.4. Compliance of the study program "Information Technologies" with the BAT study direction "Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science" and the BAT strategy

The study direction "Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Management and Computer Science", the study program "Information Technologies" is planned in connection with the planning documents of Latvia, the Guidelines for the Development of Education for 2021–2027, as well as, in accordance with

the BAT mission, vision and strategic guidelines for 2021–2025, approved by the Decision of the Members of the Turība University on 12.11.2020, Protocol No. 242. and the Scientific Activity Strategies of the Scientific Institution "Turība University" for 2021–2025, approved by the Decision of the Board of Directors No. 15 of 24.04.2024.

From **BAT's vision**: A lifestyle university, which is simultaneously a flagship of business education and green technologies in a changing world; and BAT's mission: We promote a paradigm shift by promoting understanding of business environmental and economic processes, the importance of sustainable lifestyles and green technologies, which is based on BAT's values: freedom, entrepreneurship and competence, six goals arise:

Goal. BAT is a thought leader in the economy, promoting business development, as well as changing the paradigm of public thinking towards a sustainable lifestyle.

Goal. BAT is a leading university in the field of green technologies, becoming a think tank for supporters and implementers of this idea.

Goal: BAT ensures a close connection between business and applied science by implementing relevant and meaningful research.

Goal: A long-term stable, balanced growing and profitable university – a model of business model in a world of change.

Goal: Professional, labor market-relevant personnel with 21st century skills and competencies.

Goal: Students are satisfied with the study environment and content.

See Table 1 for the compliance of the study direction "Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science" with the vision, mission and goals of BAT.

Table 1

Compliance of the field of study with the vision, mission and goals of BAT

	Turiba University	**Study field "Information technologies, computer engineering, electronics, telecommunications, computer control and computer science", study program "Information technologies"**
Vision	A lifestyle university that is also a flagship of business education and green technology in a changing world.	A study program for educational export that provides the opportunity to acquire high-level education demanded by the ICT industry and business competencies needed in the labor market.
Mission	We promote a paradigm shift by promoting understanding of the business environment and economic processes, sustainable lifestyles, and the importance of green technologies.	The study program attracts foreign students because it is internationally recognized and recognized for its good reputation and student achievements.
Values	Freedom. Enterprise. Competence.	The study program increases education export, contributes to the image of the country, positioning Latvia as a place where you can get high-quality education. Graduates, upon returning to their home countries, popularize Latvia and the Latvian education system.
Goals and objectives	Goal 1 BAT is a thought leader in the economy, promoting business	The new study program "Information Technologies" provides a modern educational

	development, as well as changing the paradigm of public thinking towards a sustainable lifestyle.	product focused on the ICT industry, and it is in international demand.
	Task 1.1 BAT is the most recognized university in the ratings of employers, entrepreneurs, and business leaders.	The content of the study courses provides modern education, tested in international experience and practice.
	Task 1.2 BAT is the most recognized Latvian university operating in the field of business education, according to entrepreneurs and business leaders.	The study content involves non-traditional, effective, practice-oriented study methods.
	Task 1.3 BAT is ranked highly in the Eduniversal university rankings as a Top Business School With Significant International Influence, and BAT's MBA programs are among the best in specific areas (specialized sector management).	The circle of international cooperation partners involved in the provision and development of the study field is expanding.
	Task 1.4 BAT operates the Turība Mentor Association with a growing number of active mentors representing all areas in which it is possible to obtain education in Turība.	Study-oriented studies with the support of the Menorah Association.
	Task 1.5 BAT promotes higher education in general by providing support in choosing the most suitable career or changing profession, in accordance with labor market trends.	The study program also focuses on students who have completed previous academic education.
	Task 1.6 BAT is active in the public sphere, offering expert opinions on current economic issues.	Students participate with projects on Latvian television, sharing their experience and accomplishments.
	Task 1.7 BAT creates awareness among the public and policymakers about the importance of education exports and the benefits of smart immigration, contributing to the formation of an open society.	The study program enrolls foreign students, promoting the export of Latvian education.
	Task 1.8 BAT promotes changes in public administration, in line with the requirements of a modern and growing economy.	ICT solutions are implemented in Latvian-scale projects that contribute to economic requirements.
	Goal 2 BAT is a leading university in the field of green technologies, becoming a think tank for supporters and implementers of this idea.	The new licensable study program "Information Technologies" is expected to admit up to 10 students in the first year of study, with an increasing trend in the following years of study. An individual study approach will be provided for each student.

	Task 2.1 Integrating the concept of green technologies into study programs, extracurricular activities, as well as the university environment	Students are offered customer service that meets modern requirements, provided by the BAT Study Information Center.
	Task 2.2 Creating a “smart home” prototype in collaboration with technology companies.	Foreign students are provided with integration into the student environment.
	Goal 3 BAT ensures a close connection between business and applied science by implementing relevant and meaningful research.	The field of study attracts highly qualified, competent and progressive teaching staff, many from abroad with work experience at foreign universities, who will engage in international applied research.
	Task 3.1 Indexing of the scientific journal “Acta Prosperitatis” in the Web of Science database.	The teaching staff is composed of ICT professionals with international experience. Both foreign and local lecturers participate in scientific conferences and seminars. Foreign guest lecturers are invited to lead seminars and “hackathons”. Of the 30 lecturers involved in the study direction, 16 have a doctoral degree, including eight professors, six are currently studying for a doctorate, and eight are leading researchers or researchers in scientific institutions.
	Task 3.2 The number of doctoral students is over 100, and doctoral theses are defended every year.	The field of study is consistent with the research work of the faculty, as well as international developments in the field.
	Task 3.3 The number of internationally cited publications and indexed articles complies with the Cabinet of Ministers' regulations - Procedure for granting expert rights and establishing expert commissions of the Latvian Science Council.	The implementation of the direction will promote the participation of teaching staff in international programs, projects, exhibitions, and experience exchange events.
	Task 3.4 Funding of scientific activities from external sources is at least 50% of the total science budget.	The study program provides an opportunity for students to engage in science.
	Task 3.5 Growing number of applied research.	The study program includes science-based research, which is developed through a master's thesis.
	Task 3.6 100% of scientific profits reinvested in science	Support for young scientists.
	Task 3.7 European Foundation for Management (EFMD) accreditation granted for bachelor's and master's degree programs until 2025	There are no international accreditation bodies in the ICT sector.
	Goal 4	The field of study provides an opportunity to demonstrate BAT's

	A long-term stable, balanced growing and profitable university – a model of business model in a world of change	contributions and achievements in the ICT sector.
	Task 4.1 Diversification of study areas and products	The faculty and students of the study field promote the development of a creative environment at the university, enriching the culture of the university as an organization.
	Task 4.2 Establishment of a BAT career center.	The study field provides an opportunity to attract new teaching staff and expand the scientific activities and publicity of existing teaching staff both in Latvia and abroad. New technical equipment is being purchased and employees are being trained.
	Task 4.3 Diversified target market.	The study field's lecturers, together with students, develop technologically high-quality IT products.
	Task 4.4 Growing number of students, which positively contributes to revenue.	The study field creates a new understanding of BAT. The achievements of the study field's faculty and students in computer science and projects are popularized. As a result, the volume of education export is increased.
	Task 4.5 Prudent investment policy and fiscal discipline.	To successfully improve physical discipline through quality education.
	Goal 5 Professional, labor-market-relevant personnel with 21st century skills and competencies	Aligning skills and competencies with the new professional standard of a leading software engineer.
	Task 5.1 The ICT skills of the lecturers are in line with the requirements of the 21st century.	Share experiences with students about lecturers' ICT skills.
	Task 5.2 At least 65% of persons elected to academic positions have a doctoral degree.	In the IT direction, BAT will increase the number of academic positions with doctoral degrees.
	Task 5.3 The number of foreign lecturers is at least 20% of the total number of lecturers.	Foreign lecturers are attracted to IT study programs.
	Task 5.4 Lecturers are closely connected to the labor market.	In the IT direction, lecturers are labor market experts in the industry.
	Goal 6 Students satisfied with the study environment and content	Survey data shows that IT students are satisfied with the study environment and content.
	Task 6.1 Through its study program content and extracurricular offerings, BAT	BAT SP helps with extracurricular offers, as well as summer schools in which IT students participate.

	promotes the acquisition of *soft skills* and a sustainable lifestyle, changing the mindset of society.	
	Task 6.2 BAT is a socially responsible company whose values resonate with those of the Zeta generation.	Student-centered studies.

The BAT strategy is available online [at https://www.turiba.lv/storage/files/bat-strategija-10-11-2020-web.pdf](https://www.turiba.lv/storage/files/bat-strategija-10-11-2020-web.pdf)

1.2. Characteristics of the development of the study process

The second-cycle professional higher education study program "Information Technologies" was developed by BAT management and faculty in cooperation with faculty from other universities, employers and industry associations. Cooperation is active with LIKTA (Latvian Information and Communication Technology Association), where Turība is an annual member. An IT expert is attracted from LIKTA, who participates in the study program development process. Cooperation is between several international IT companies, which participate in providing guest lectures, developing study program recommendations and implementing a new study program, including new study courses necessary for the IT industry. Cooperation agreements can be viewed in the appendices. Cooperation agreements have been concluded between universities in various aspects, such as the possibility of sharing the library for students and faculty, as well as mutual cooperation of universities in Erasmus+ projects, etc. **Turība University has switched to ECTS system credit points and all credit points are already expressed in new numerical terms, see the ECTS BAT document in the appendix** . During the process of developing the study program, in consultation with stakeholders, it was concluded that the content of the study program should meet the following requirements:

Engineering and Technology:

- Students should be familiar with the concepts of complex software design (software development), algorithms, and data structures.
- Multiple programming languages.
- Acquisition of advanced programming knowledge.
- Implementation, maintenance and continuous software provision and development.
- Development and maintenance of good practice.
- Development and implementation of the concept of artificial intelligence.
- Systems analysis of existing systems.

Scientific research:

Develop interest and understanding of scientific methods and the ability to conduct research or engineering-related experiments.

Practice:

Strengthen academic knowledge by practically programming various systems, applying high-performance algorithms, testing, modeling, simulating, offering solutions to mitigate specific risks, presenting results, and communicating within a team.

Type of faculty involvement:

- Development of course descriptions based on the latest requirements in computer science.
- Development of course descriptions, ensuring a high-quality and professional approach to course content.

- Methodological seminars are planned (at least twice per academic year) on improving the study process in each study course, including improving study course descriptions.
- Offering relevant new courses in the study program.
- Organize public lectures.
- Organize regular observation of lecturers' work by developing uniform observation criteria for the study program.
- Supervise the conduct of organized methodological seminars.

Employers:

Cooperation in the development of internships and master's theses has been received from the following organizations: Accenture (Accenture Latvian branch), Visma, TestDevLab, etc.

Students:

From the 2022/2023 academic year, students are involved in the creation of the program content. Students from the student government are involved to provide their vision for improving the content of the study program " Information Technologies " and creating new study subjects.

Internal evaluation:

The introduction of the study direction “Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science” and the development of the study program “Information Technologies” were discussed at the Faculty of Information Technology, Management meetings, and Rectorate Council meetings.

The implementation of the initiated study program is planned in the following process activities: applicants (matriculation), involvement of teaching staff, employers (contracts) and involvement of students (student self-government).

1.3. Compliance of the study program with European Union industry trends

According to *IDC*[3] (*International Data Corporation*), global spending on information and communications technology (ICT) reached nearly $4.7 trillion in 2022 and is projected to grow steadily through 2027 at a 5.7% compound annual growth rate (CAGR) after a slightly slower 2023, according to the latest update of the International Data Corporation (IDC) Worldwide ICT Spending Guide: Enterprise and SMB by Industry. Despite a slowdown in various segments of this industry last year and recent layoffs, software and information services will be the fastest-growing industry over the 2023-2027 forecast period, generating a CAGR of 11.4%, as technology companies engage in some course-correction initiatives following the rapid expansion of investment and hiring seen in previous years. Capital markets will be the second fastest growing sector with a CAGR of 10.2%, followed by life sciences with a CAGR of 8.8%, driven in part by growth in China. The three sectors (excluding consumer) with the largest ICT investments in 2022 were banking, federal/central government, and telecommunications. Together, these sectors generated $715 billion in global ICT spending. Software and information services and retail were the next largest sectors in terms of ICT spending in 2022, with the top 5 sectors accounting for almost 35% of total spending.

Referring to *CompTIA's*[4] software solutions, there will be a high demand, such as Artificial Intelligence tools that will help companies carry out digital transformation.

To ensure the compliance of the study program with the practice of EU universities, the study program "Information Technologies" is compared with two second-cycle professional higher education study programs offered by foreign universities, see Annex 1.

[3]https://www.idc.com/getdoc.jsp?containerId=prUS51261623

[4]https://www.comptia.org/content/research/it-industry-trends-analysis

1.4. Description and analysis of the development prospects of the study program

In order to consistently improve the quality of the study program, to be able to provide knowledge, current skills and competencies, the parties involved in the BAT study program will follow the labor market trends and the latest achievements in computer science. The ability to adapt to the labor market requirements will increase the competitiveness of students among similar study programs of other Latvian and Baltic universities. In turn, the latest scientific research directions will allow developing and integrating more current study programs and attracting more knowledgeable and competent teaching staff.

BAT has experience in evaluating study programs using both student proposals and employer evaluations.

When evaluating the study program "Information Technologies" using the SWOT method, it can be concluded that **the strengths of the study program** are as follows:

- the teaching staff is made up of practitioners in the field, full-time lecturers are involved in projects that improve their practical skills, as well as conduct scientific research;
- The content of the study courses is based on international standards, covering a wide range of globally accumulated knowledge, using the best examples from other universities, practice materials, and thoroughly and carefully prepared lectures;
- labor market-oriented training, which is dynamic, as the professional choice part allows for the inclusion of new and relevant study courses for the labor market;
- cooperation agreements with state institutions and businesses, as well as with non-governmental organizations, create an opportunity to build cooperation;
- the rapid development of the university's library resources and the latest electronic databases of scientific literature available in the library;
- modern material and technical base – modern auditorium equipment;
- new Rules for Independently Developed Thesis were developed, which included the requirement to submit the work also in electronic form, thus creating a database of student works, which will help to effectively combat plagiarism;
- To strengthen strong scientific research traditions, lecturers participate in IT professional development courses on scientific paper writing and various seminars that allow them to improve their existing knowledge.

As **weaknesses of the study program**:

- insufficiently rapid increase in the proportion of lecturers with doctoral degrees.

The study program has broad **development** opportunities:

- working with students;
- cooperation with other universities, including those outside Latvia, should be strengthened by agreeing on student exchange opportunities;
- Students' awareness of how the study program will affect students' professional choice of study courses for further studies and professional acquisition should be improved;
- working with lecturers;
- define the objectives of the study areas to be implemented as study outcomes in accordance with the EQF and, in accordance with them, review the objectives and expected outcomes of study courses;
- develop clearer criteria for evaluating final examinations, study papers, and diploma theses;
- to systematically control that the overall objectives of the study program are included and adhered to in each study course;

- ensure that the sequence of study courses is organized sequentially, so that they are grouped from simple to complex;
- to improve the methodological materials necessary for study courses;
- conduct a survey of students and graduates. For example, when collecting and summarizing data and information about graduates' further work careers and plans for further education, Cabinet of Ministers Regulation No. 348 "Procedures for the submission of information about their activities by higher education institutions and colleges to the Ministry of Education and Science";
- independent improvement of the program development strategy, taking into account changes in the labor market and industry development trends in the world and the EU;
- cooperation projects and agreements with various Latvian and foreign educational and scientific research institutions;
- increasing the scientific and methodological potential of staff, attracting qualified guest lecturers;
- further improvement of the material base, paying special attention to the establishment of laboratories, the latest books and scientific journals;
- Creation of marketing and financial attraction plans after matriculation of 1st year applicants.

Possible **threats** to the study program could be:

- too low a salary level to attract recognizable scientists or IT industry professionals;
- Overproduction of IT specialists.

Statistical data on admitted students and graduates in the ITF study direction at BAT over the last 3 years

Admission to the 1st year

Stud.year	CS			KC			Total
	Inter.	LV		Inter.	LV		
2022/2023	27	7	34		30	30	64
2023/2024	51	20	71	1	47	48	119
2024/2025	41	39	80		32	32	112
Total	**119**	**66**	**185**	**1**	**109**	**110**	**295**

Graduates (I took from 2021/2022, because this academic year has only had a winter graduation).

Stud.year	CS			KC			Total
	Inter.	LV		Inter.	LV		
2021/2022					4	4	4
2022/2023	2	2	4				4
2023/2024	3	7	10		2	2	12
Total	**5**	**9**	**14**	**-**	**6**	**6**	**20**

2. RESOURCES AND PROVISION

2.1. Assessment of the study base necessary for the implementation of the study program

The management of the study program is characterized by an initial emphasis on ensuring the quality of high educational standards, in accordance with the Latvian Qualifications Framework level (7.LKI), professional qualification level (7.PKL), professional standards - systems analyst *(07.06.2023., https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-251.pdf)*, lead software engineer *(07.06.2023. https://registri.visc.gov.lv/profizglitiba/dokumenti/standarti/2017/PS-254.pdf)*.

Summary of core professional activities: plans, performs and manages the planning, development, testing, implementation and maintenance of a software module and/or system. Determines and organizes the technological processes of development in accordance with technical documentation, standards and user requirements. Develops software in accordance with the conditions of functionality, quality and resource capacity, organizes and manages a working group of programmers, as well as systematically improves their knowledge and skills.

The basic structural units involved in the implementation of the study direction "Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science" and the study program "Information Technologies" and their tasks are shown in Table 6.

Table 6

BAT structural units involved in the implementation of the study field and study program

Structural unit	Tasks in the implementation of the study field and study program
Rector, Vice-Rector for Scientific and Academic Work, Vice-Rector for Study Development and International Cooperation	BAT structural unit of the university's pedagogical and scientific for process management and international cooperation. The main tasks are: • ensuring a unified pedagogical process at the university; • organization and management of the study process; • scientific - methodological activity management; • ensuring study development and international cooperation; • necessary to ensure the performance of the above tasks development of organizational, order, information and report documents.
Faculty of Business Administration, Faculty of Law, Faculty of International Tourism and Faculty of Information Technology	A faculty is a structural unit of a higher education institution established for professional, academic, methodological and scientific activities at the faculty in the areas of study to be implemented. The tasks of the faculty are: • develop international competitiveness; • create new programs and new courses; • to improve the study process; • to promote loyalty among academic staff, students and employees; • develop cooperation with students, employers and graduates; • to establish cooperation with other universities, including those outside Latvia;

	• to promote students' entrepreneurial analysis and self-analysis, as well as communication skills, creativity, and cultural level compliance with the international business environment.
Study part	The Study Division is a structural unit of BAT that ensures the study process planning and progress. Tasks of the study part: • plan and coordinate the study process; • ensure the recording of the teaching workload of lecturers; • organize the record keeping of the study process: o to create and update academic groups; o keep records of students and groups; o prepare orders regarding student status and study groups; o prepare educational documents; o prepare study maps; • ensure the recording and analysis of student success; • prepare statistical reports.
Department of Law, Department of Languages, Department of Business Administration, Department of Information Technology, Department of Health	A department is a structural unit of a faculty responsible for study, methodological and research work. The department ensures the implementation of study courses in accordance with the study program goals, objectives and expected results. Tasks of the department: • to systematically improve the study process; • participate in the creation of the library fund; • to organize scientific research and methodological work; • to participate in the lifelong learning system of the University; • to collaborate with employers, students and graduates in the field of study • process modernization issues; • to create a student culture and a positive attitude towards studies; • to organize the exchange of experience and qualification improvement of lecturers; • to ensure the management of internships and study projects, to approve their supervisors; • organize the department's records.
Institute of Business Technology	The goal of the institute is to ensure the scientific activities of BAT in order to promote the competitiveness of merchants, commercial companies and enterprises of the Republic of Latvia, develop the intellectual potential of BAT and improve study programs in accordance with modern scientific achievements. Tasks of the Institute: • to conduct applied research in areas relevant to the BAT profile; • participate in national and international research projects and programs; • to provide research and advisory services; • organize scientific conferences, seminars and lectures; • publish research results and other informative materials;

	• participate in the implementation and improvement of BAT study programs; • define the guidelines for the institute's scientific activities and the main research directions; • to evaluate the scientific research activities of the institute.
Information and Communication Technology Laboratory (IKTL)	Information and Communication Technology Laboratory (ICTL), where various study courses are implemented for current and prospective students. Each study course has different opportunities and ways of using ICTL as a knowledge base. Various equipment allows you to gain an understanding of the possibilities of Information Technology and their advantages. IKTL's mission is to create and disseminate knowledge in Information Technologies in Latvia and the world by creating a high-quality and comprehensive technology infrastructure. It is implemented using world-class examples such as *Massachusetts Institute of Technology* and *Stanford University,* allowing students to create a path to their success. Student-oriented practical classes with the aim of guiding them towards independent work with innovative future solutions. IKTL's vision is to create and maintain an efficient operating environment and provide high-quality, fast, cost-effective and reliable technology services, in cooperation with Information Technology companies that are major players not only in the Latvian market, but also at the global level. We have started cooperation with such companies as *Accenture Latvija* , *Kleintech Software* , *Visma Enterprise* , *TestDevLab* , *TietoEVRY* , etc. IKTL tasks: • conduct ICT research (Erasmus+, etc.); • participate in national and international research projects and programs; • to provide research and advisory services; • publish research results (scientific articles Q1, Q2, patents, etc.); • participate in the implementation and improvement of IT study programs; • a student environment where to develop innovative solutions that can achieve patent potential and commercialization capability.
Study Information Center	The Study Information Centre (hereinafter – SIC) is part of the Development Department of BAT structural unit for informing and for service provision. SIC tasks: • registration and admission of applicants in cooperation with an admissions committee approved by the Senate; • providing information to students and interested parties: • provide information about BAT services; • organization of records: o to organize the documents submitted by applicants; o to create and maintain files of applicants and students in accordance with the laws and regulations of the Republic of Latvia;

	○ prepare contracts for obtaining education, organize their conclusion, and make amendments to them; ○ organize the conclusion of loan agreements with students for the granting of a loan for studies; ○ organize the signing of sponsorship agreements with students; ○ ensure the review of applications of students registered in SIC and control of their implementation; ○ prepare and issue certificates to students; ○ prepare and issue permits - assignments to students; ○ to carry out study and student lending records; ○ to correspond with students within the scope of the department's competence; ○ to ensure the production, issuance and extension of ISIC cards for students. • listening to customer wishes, collecting and transferring information • the relevant structural units; • making changes to student and study data in the database.
Information Systems Division	The Information Systems Division is a structural unit of BAT for the creation, maintenance and improvement of the BAT information system, as well as for providing the work and study process with the necessary computer equipment and software, by purchasing, maintaining, modernizing, renewing, recording and preserving them. ISD tasks: • software development, acquisition, implementation and maintenance for BAT needs; • Purchase, installation and maintenance of BAT computer hardware and software; • computer network user administration; • ensuring computer network and data security; • accounting and control of the use of computer hardware and computer network resources; • user training; • development of regulatory documents for the use of computer equipment and computer networks.
Library	The library is a structural unit of BAT, which performs the functions of a study and science information center and maintains the BAT library's connections with Latvian and foreign libraries and information centers. Library tasks: • implement the Library Fund building policy; • ensure the availability and efficiency of information; • ensure the maintenance of the fund; • to provide services: ○ to issue books, copy Library materials, bind materials, sell books published by the University, advise readers about the Library's collection, etc.; ○ plan resources in cooperation with faculties, departments and other structural units for the acquisition of high-quality collections, improving the qualifications of employees, modernizing the Library and providing it with material and technical resources.

Development part	The Development Division is a structural unit of BAT, the main objective of which is attract students to BAT. Functions and tasks of the Development Department: • BAT branding (development of BAT brand strategy, development and maintenance of graphic standards); • promoting study programs in the market and ensuring and/or coordinating marketing activities in accordance with BAT's long-term development concept; • involving students in improving the study process by measuring student satisfaction with the services provided by BAT and evaluating the results; • Planning, organizing and ensuring BAT public relations in accordance with the interests of the company and the goals and objectives set by management; • cooperation with graduates (development and implementation of a loyalty program, database updating, conducting surveys); • Overseeing the operations of the Study Information Center, which provides services to applicants, interested parties, and students.
Lifelong Learning Department	Goal – to promote the implementation of the lifelong learning process and the development of the Latvian population the growth of intellectual potential in accordance with the European Union and Latvia's lifelong learning policy guidelines and strategy. The tasks of the department are: • to promote the development of the adult education system; • to promote the improvement of the qualifications of residents and their education; • develop a modular training approach to obtaining higher education.
BAT Publishing House	The goal of the publishing house is to prepare, print and sell educational, methodological and practical literature for students, pupils, pupils and teachers of BAT and other educational institutions, as well as for the widest part of the public related to business. Publishing house tasks: • to ensure the publication and sale of various books; • in accordance with market demand and analysis of competitors' activities, in cooperation with state, municipal, private companies, public organizations and private individuals, to carry out profitable activities in line with the BAT strategy; • to ensure economical use of funds in achieving goals; • to advise BAT employees on publishing issues; to develop organizational and order documents necessary to ensure the fulfillment of the above-mentioned tasks.

Both academic and administrative departments at the university are able to ensure high-quality organization and supervision of study processes, as well as meet other study program needs.

In the study courses with the industry organization, a specialist from “Tieto Latvia” is involved in order to be able to ensure the stabilization of appropriate programming fundamentals and to be involved in the improvement of the study program. Also, the existing

agreement with the leading Latvian ICT company “Accenture Latvia” is being supplemented. Part B of the study courses with “Accenture Latvia” is developing a unified study course from the industry side, which will allow students to increase their view of existing ICT projects at the global level.

See Appendix 2, which summarizes employers' letters of intent (certificates) regarding the provision of internships for students.

2.1.1. Management of the study program “Information Technology”

The main directions of the BAT IT faculty, the study program are discussed and approved annually at the ITF Council meetings. These main directions set goals and list tasks to be performed in order to improve the quality of the education provided, improve and supplement existing resources, ensure the sustainability of the implemented program. As well as implement cooperation with other universities and visiting professors. Erasmus+ visiting professors' visit ITF and other universities' agreements in Erasmus+ projects. ITF is the leading partner in the INTUX project, which was successfully completed in 2024 with excellent results, receiving a record number of points and with many achievable goals that have been achieved. The main directions of the BAT faculties and departments, which are approved by their Councils, determine the following main tasks:

- Continuously improve study directions, study programs or create new study programs and the quality of education provided, appropriate knowledge, skills and competencies;
- To improve and supplement existing resources to improve students' practical skills in cooperation with employers;
- Ensure the sustainability of the implemented programs by developing competitiveness and improving study programs in accordance with today's socio-economic and market conditions;
- To implement a broad cooperation program with other universities, promoting the mobility of academic staff and students.

Since, the BAT study program “ Information Technologies ” is one of the components of the new study direction “Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science” in the administrative structure. Initially, an IT department was established. With its restructuring (November 2024) into an IT faculty with an IT department.

The organizational structure of the study field and study program management when starting studies in the first year of the study program (initially, schematically), see Figure 1. Study program and organizational management scheme.

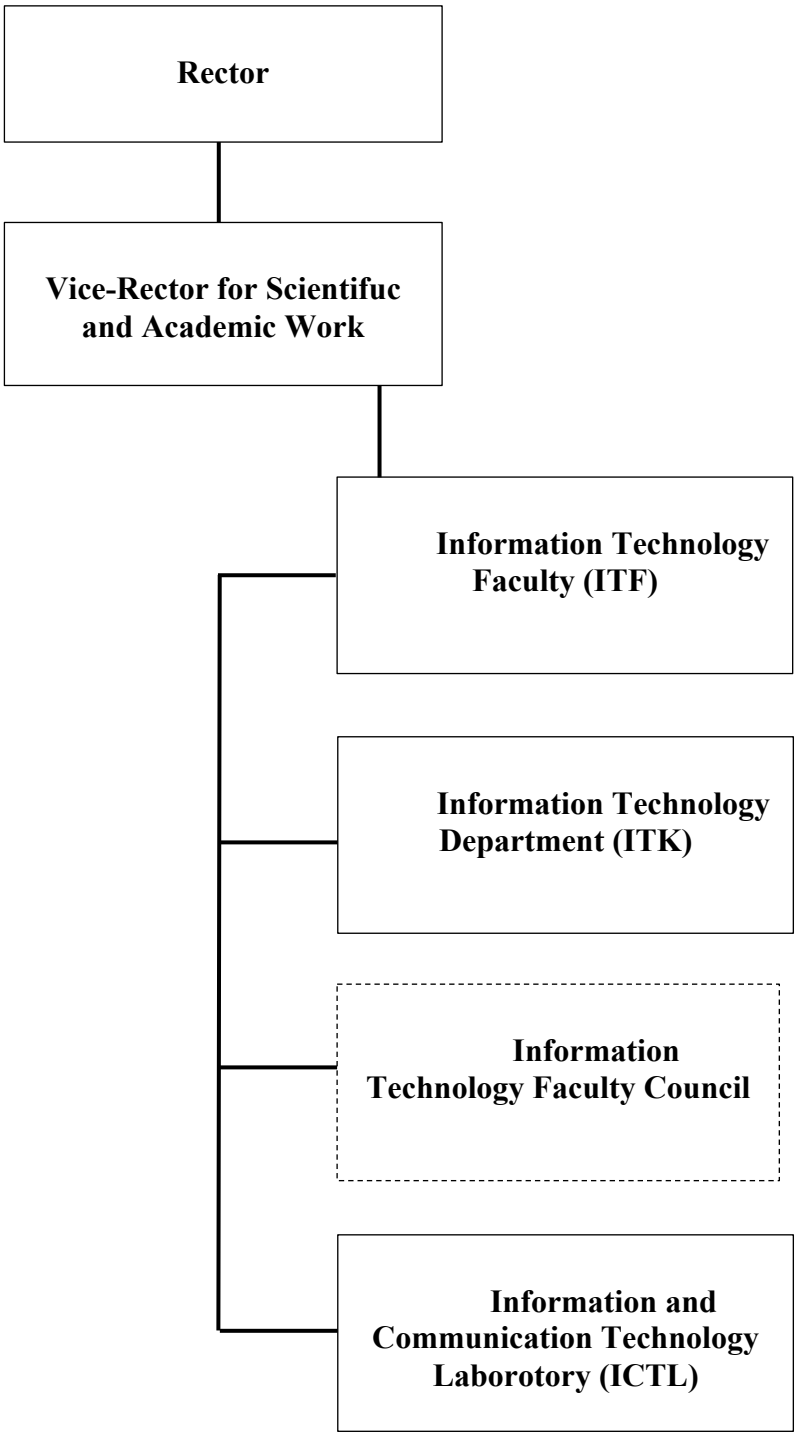


Figure 1. **Study programs and organizational management chart**

The diagram shown does not show support structures, such as the Development Department, the Institute of Business Technologies, the Student Information Center, the IS Department, and the Technical Department.

2.2. Assessment of the information and methodological base

BAT library resources for the study program “Information Technologies” are updated before the start of each academic year. At the moment, a total of 90 new books are available for the study courses (Chip Huyen, (2021) Designing Machine Learning Systems: An Iterative Process for Production-Ready Applications. Michal Jaworski, Tarek Ziade, Expert Python

Programming: Master Python by learning the best coding practices and advanced programming concepts, 4th Edition. Mikael Krief, Learning DevOps: A comprehensive guide to accelerating DevOps culture adoption with Terraform, Azure DevOps, Kubernetes, and Jenkins, 2nd Edition.).

Also, new textbooks for study courses are being purchased for the spring semester, a total of 38 new books (Noah Gift, Alfredo Deza, Practical MLOps: Operationalizing Machine Learning, ModelsO'Reilly Media, 2021. CARTY BINN, EVERYTHING VISUAL STUDIO: Everything you Need to Know About Visual Studio for Coding, Programming & Programs Development + Professional Hacks, Tips & ... (Beginners, Experts & Seniors Guide), 2022., Holger Findling, Modeling & Simulation: A Study in Unity, 2020.). Also, at the beginning of 2019, the online database "Proquest Computing Database" - a scientific full-text database in computer science - was purchased for the BAT library. Also, subscriptions to the magazines "Computer Arts" and "Web Designer Magazine" should be added. BAT Within the framework of the currently licensed program and planning the development of BAT, and taking into account the intention of the Dean of BAT ITF to develop the study program "Information Technologies", relevant literature was purchased in a timely manner to ensure the existing study program and its further development.

In order for students and teaching staff to have continuous access to study process, methodological and other relevant information, BAT has created BATIS and maintains the BATIS system, which contains all the necessary information. This information system is available to students both from a web browser and as a mobile application that can be connected with their unique username and password. This system contains all information related to the study process, as well as achievements and assessments that apply to the student. In turn, the BATIS system is available to teaching staff in a web browser and is used to organize daily work with students (announcements, achievements, test dates and publication of teaching materials). It also contains regulatory information and information to support scientific activities.

Methodological support, guidelines, methodologies, manuals, etc. can be found on the Internet and in the student information system BATIS, which contains documents binding on students.

All the indicated resources are used and available for the needs of the second-cycle professional higher education study program "Information Technologies" at BATIS:

- Internal procedures
    - BAT students' actions in the event of a fire or other emergency situation
    - Library Terms of Use
    - Business incubator regulations
    - Terms of use of computer equipment
    - Information system usage rules for students and listeners
    - Resources available to students at no additional cost
    - Internal regulations of SIA "Biznesa augstskola Turība"
    - Gym usage rules
    - Regulations on the processing and protection of students' personal data
    - Rules for the use and maintenance of premises
- Youth tourism hostel
    - Various rules
- Tuition fees. Credits. Discounts. Prices
    - Regulations on the competition for budget places and scholarships at the Turība for the 2023/2024 academic year
    - Regulations on the competition for budget places and scholarships at the Turība for the 2024/2025 academic year
    - Regulations on changes in tuition fees when a student changes the form, form and type of studies, program or language of study of the program
    - Rules for applying tuition fee discounts for the 2022/2023 academic year

    - Tuition fee discount rotation rules for the 2023/2024 academic year
    - Tuition fee discount rotation rules for the 2024/2025 academic year
    - V Rental and service prices. Tuition fee prices for the 2024/2025 academic year
    - V Rental and service prices. Tuition fee prices for the 2024/2025 academic year
- Study process
    - Admission regulations for the 2023/2024 academic year
    - Admission regulations for the 2024/2025 academic year
    - Regulations on the recognition of knowledge, skills and competences acquired outside formal education or through professional experience
    - Erasmus+ Mobility Programme Regulations
    - Procedure for providing responses to reviewed student applications
    - Regulations on Academic Integrity and Plagiarism
    - Regulations on the development and presentation of independent research papers
    - Regulations on the submission and defense of study theses
    - Regulations on the study procedures in double diploma and bilateral exchange programs
    - Examination regulations
    - Practice regulations
    - Study regulations
    - Procedure for stopping and resuming studies
    - State Examination Regulations
- General documents
    - Regulations of the Academic Arbitration Court
    - Business school Turiba Satversme
    - Faculty regulations
    - Quality policy
    - Regulations on the Election of Representatives of the Constitutional Assembly
    - Senate regulations
    - Student Self-Government Regulations

BAT Library is a structural unit of SIA "Biznesa augstskola Turība" - a publicly accessible library, the keeper and maintainer of information resources necessary for academic and scientific activities.

The library provides library users with the information resources and services necessary for the study process and scientific activities; creates and supplements the library collection and the library information system (BIS) "Alise" with the latest, most current information resources in cooperation with the faculties, departments and other structural units of the university, in accordance with the directions of scientific work of the university and the requirements of study programs.

Library electronic catalog: https://w3i.turiba.lv/Alise/lv/home.aspx

In the field of information technology, the library has departments in accordance with the UDC (Universal Decimal Classification) where literature on this topic is available in both Latvian and foreign languages, see Table 3.

Table 3

UDC departments in computer science

004	Computer equipment. Software	*Computer science and technology. Computing. Data processing*
044 (03)	Computer dictionary, manuals	*Dictionaries and handbooks of computer engineering*
004.4	Software	*Software*
004.43	Programming languages	*Programming languages*
004.6	Data. Databases	*Data and databases*
004.7	Networks. Local network. External networks. Internet	*Computer communication. Computer networks*

The library's collection contains (10.09.2024.) 42,488 copies of books, in the field of information technology - 228 titles (854 copies) of books.

The library ensures the availability of the library collection, including electronic databases, for the implementation of independent studies and research; organizes and ensures library and bibliographic services, modernizing and expanding the quality of the services provided. The university subscribes to online electronic databases: Scopus, ScienceDirect, LETA. Nozare.lv., Letonika, Lursoft, EBSCO Academic Search Complete, EBSCO eBooks Academic Subscription Collection, EBSCO Business Source Complete, and trial databases are also constantly offered to students. https://turiba.lv/lv/biblioteka/tiessaistes-datubazes

The library provides a comfortable and work-friendly environment for users. A large collection of open access books - subscription with an electronic catalog available to users, a library reading room with the latest press releases. Currently, 182 workplaces are available to students, 59 of which are computerized. The library offers a variety of library services to students and other library users: https://turiba.lv/storage/files/bibliotekas-pakalpojumu-cenradis_1.pdf

Every year, Turība invests funds to supplement the library's information resources (both for the purchase of literature and for subscriptions to electronic databases). The Turība library is a member of LATABA (Latvian Association of Academic Libraries).

An agreement has been signed with RTU on cooperation in the use of library information resources. The agreement will enable students of the BAT study direction and the study program "Information Technologies" to use the information resources in the collections of the RTU Scientific Library. See the library's working hours in Table 4.

Table 4

BAT library opening hours

Day of the week	Subscription	Reading room
On Mondays	11:00-18:15	00:00-24:00
Tuesdays	10:30-18:15	00:00-24:00
Wednesdays	10:30-18:15	00:00-24:00
Thursdays	11:00-18:15	00:00-24:00
On Fridays	10:00-17:00	00:00-24:00
On Saturdays	10:30-16:00	00:00-24:00
On Sundays	Closed	Closed
First Monday of every month - closed subscription - 1st floor (Spotrības Day).		

For a list of computer science-related books in the BAT library, see Annex 3. Due to the large amount of information, this appendix is included only in the electronic version of the study program "Information Technologies".

2.3. Information on the financial basis

The financial resources, teaching staff, library book collection, IT equipment, infrastructure, support units and methodological support are sufficient for the initiation and implementation of the study process of the study program "Information Technologies".

2.3.1. Financial basis for the implementation of the study program “Information Technologies”

BAT uses only private funds to provide studies. BAT's financial position is extremely stable. Every financial year, starting from the establishment of the university, has ended with a profit. The reason for this is both the successful economic activity of the university and well-thought-out and purposeful activities in the field of education. The financing plan for each year is determined by the university's budget. Revenues consist of tuition fees at the university, participation fees in seminars, hotel services, and other income from economic activities. Expenses are planned in proportion to the revenues in the budget, the main items of which are staff salaries, social insurance payments, premises maintenance expenses and utility payments, material expenses of the educational process, purchase of new equipment, as well as premises reconstruction and repairs. Financial resources for the study direction to ensure the implementation of the study program:

The net turnover for the 2022/2023 financial year is EUR 6,040,860, and the profit before tax for the reporting year is EUR 1,242,928.

Turība revenue from the sale of goods and provision of services is EUR 8,374,999.

The amount of share capital in the balance sheet for the reporting year as of 30.06.2023 is indicated as EUR 2,134,300, the total amount of equity capital is EUR 5,949,620.

Research funding sources are BAT funding, which is regulated by N146

approved at the Senate meeting of SIA “Biznesa augstskola Turība” on 27.03.2024, minutes No. 6 of the Board's decision No. 11 of 28.03.2024 "Regulations on scientific research activities of the Turība University"[5], as well as individual projects in which BAT or individual lecturers participate. This funding is used both for participation in conferences with papers and for translating publications. Additional remuneration is granted to lecturers for indexing publications in Scopus or WoS databases. Both conference papers and publications are written on issues included in the study programs, and the researched material is used in the study process, including it in the relevant study courses.

Another factor determining the stability of a university is the diversified and branched structure of study programs and study forms, which, when the market narrows in one sector, allows it to be compensated with sufficiently large revenues in another. Combined with thoughtful, economical and efficient use of resources, a stable revenue base is a necessary factor for the stable operation of a university in the future.

Investments in the development of the university are made by forecasting changes in both the demographic situation, the European Higher Education Area, and the Latvian regulatory system. Such an approach will ensure the university's future growth.

The costs per student for the 2025/2026 academic year are attached in Table 2.

[5]Internal documents will be available for viewing on the internal BATIS network with issued access.

Table 2

Financial calculation of the study program "Information Technologies"

"Information Technologies, Computer Engineering, Electronics, Telecommunications, Computer Control and Computer Science" direction Professional Master's degree higher education study program Information Technologies , Riga

Professional Master's study program full-time Information Technology, Riga

Annual costs of the study program

Total	**100%**	**EUR**
including:		
Academic staff costs - salaries	27%	407.7
Academic administration costs - salaries	5%	75.5
Other academic and scientific activity costs	6%	90.6
Other study costs, including library costs	12%	181.2
Development, information technology, study support costs	15%	226.5
Utilities, major repairs to premises, daily maintenance, utilities, security and technical support costs	19%	286.9
Administrative costs, including real estate tax and property insurance	4%	60.4
Social security costs	5%	75.5
Other costs	7%	105.7
Cost per student	**1,510**	**1,510**

Professional Master's study program part-time (distance learning) Information Technologies, Riga

Annual costs of the study program

Total	**100%**	**EUR**
including:		
Academic staff costs - salaries	25%	377.5
Academic administration costs - salaries	5%	75.5
Other academic and scientific activity costs	6%	90.6
Other study costs, including library costs	12%	181.2
Development, information technology, study support costs	15%	226.5
Utilities, major repairs to premises, daily maintenance, utilities, security and technical support costs	19%	286.9
Administrative costs, including real estate tax and property insurance	4%	60.4
Social security costs	5%	75.5
Other costs	9%	135.9
Cost per student	**1,510**	**1,510**

The required number of students is a minimum of 5 (five) to ensure a high-quality study process.

The IT faculty has funding available from the Science budget up to 50,000 EUR, which is actively used. There is funding available for research, researcher positions are provided, the budget is internal. Also, various equipment is purchased at IKTL, which is one of the structural units of the IT faculty. Every year, funding is increased, as well as external funding is attracted from Erasmus+ and ESF projects. To improve the study program, for example, within the framework of the ESF DigiCall and Erasmus+ INTUX projects, 2 new study courses are being

developed, which will be included in the study programs with the 2023/2024 academic year. Students are involved in research at IKTL with scientists.

BAT's audited **financial statements** in Annex 4.

2.4. Assessment of the material and technical base

BAT is the largest private university in Latvia with stable traditions and a clear vision for the future in the context of the European Higher Education Area. The university, founded on July 5, 1993, boasts 3,979 students as of October 1, 2024 and 18,025 graduates in the 2024/2025 academic year. The university has modern teaching facilities, an open-access library, a student campus and a sports hall.

The higher education institution has been granted indefinite accreditation (Accreditation Sheet Registration No. 002, 08.05.1997), educational institution registration No. 3343800213. The higher education institution has four faculties and one department:

- Faculty of Business Administration;
- Faculty of Law;
- Faculty of International Tourism;
- Faculty of Information Technology;
- Department of Health.

BAT offers a wide range of study opportunities for students – to study in Bachelor's, Master's or Doctoral study programs in English.

BAT is a leading private university in Latvia, providing modern, multi-level, business-oriented education. The company strives to be competitive, dynamic and profitable for its owners in the long term. By cooperating with vocational education institutions, industry associations and employer organizations, we promote the offer of only a range of study programs that meet the requirements of the labor market, are in demand and are recognized by the state. BAT graduates are able to confidently compete in the Latvian labor market.

The core value of our university is highly qualified, competent, progressive academic staff and professional administrative staff. We promote more successful study programs with a high-level, modern material and technical base and a wide range of methodological materials.

BAT ensures that our clients are provided with modern infrastructure, as well as a comfortable, safe and tidy environment. An important criterion when choosing suppliers is reliability and professionalism, as well as successful previous cooperation.

The university's operations are based on continuous improvement, as well as the principles of excellent business and quality management systems, satisfying customer expectations and gaining their trust.

BAT has the necessary resources for the implementation of the study field and the corresponding study programs:

1. All necessary conditions have been created for studies – new conference rooms, auditoriums, computer labs, a modern library with a spacious reading room. The auditoriums are equipped with high-quality visual equipment – whiteboards, overhead projectors and screens, multimedia projectors, audio and video equipment. Computerized workplaces are available to students. Stationary multimedia projectors are installed, portable multimedia projectors are also available. The gym can also be used during the study process.

2. Students can use the entire BAT territory for practical classes (except for places that are rented or otherwise prohibited from being there), including parking lots and buildings.

3. For special training of students, a Business Incubator environment has been created at BAT, where students can practically acquire professional skills in business management processes.
4. The material and technical support of the university is regularly supplemented, renewed and modernized.
5. New literature is regularly purchased in the library, both in printed and electronic format.
6. Students are provided with free access to both the library and other resources during the hours available to students of all departments.
7. Students are provided with consultations from lecturers. Students with questions about the study process can contact the Study Information Center, the department or faculty, or for international mobility issues – the International Department.
8. BAT provides part-time distance learning studies (e-study) using INTERNET technologies. The Information Systems Department provides technological support for the study process, ensuring the maintenance and improvement of the information system.

2.4.1. Turība University Library

The library is a structural unit of SIA "Biznesa augstskola Turība" - a publicly accessible library, the keeper and maintainer of information resources necessary for academic and scientific activities.

The library provides library users with the information resources and services necessary for the study process and scientific activities; creates and supplements the library collection and the library information system (BIS) "Alise" with the latest, most current information resources in cooperation with the faculties, departments and other structural units of the university, in accordance with the directions of scientific work of the university and the requirements of study programs.

Library electronic catalog: https://w3i.turiba.lv/Alise/lv/home.aspx

In the field of information technology, the library has departments in accordance with the UDC (Universal Decimal Classification) where literature on this topic is available in both Latvian and foreign languages, see Table 3.

Table 3

UDC departments in computer science

004	Computer equipment. Software	*Computer science and technology. Computing. Data processing*
044 (03)	Computer dictionary, manuals	*Dictionaries and handbooks of computer engineering*
004.4	Software	*Software*
004.43	Programming languages	*Programming languages*
004.6	Data. Databases	*Data and databases*
004.7	Networks. Local network. External networks. Internet	*Computer communication. Computer networks*

The library's collection contains (10.09.2024.) 42,488 copies of books, in the field of information technology - 228 titles (854 copies) of books.

The library ensures the availability of the library collection, including electronic databases, for the implementation of independent studies and research; organizes and ensures library and bibliographic services, modernizing and expanding the quality of the services provided. The university subscribes to online electronic databases: Scopus, ScienceDirect, LETA. Nozare.lv., Letonika, Lursoft, EBSCO Academic Search Complete, EBSCO eBooks Academic Subscription Collection, EBSCO Business Source Complete, and trial databases are also constantly offered to students. https://turiba.lv/lv/biblioteka/tiessaistes-datubazes

The library provides a comfortable and work-friendly environment for users. A large collection of open access books - subscription with an electronic catalog available to users, a library reading room with the latest press releases. Currently, 182 workplaces are available to students, 59 of which are computerized. The library offers a variety of library services to students and other library users: https://turiba.lv/storage/files/bibliotekas-pakalpojumu-cenradis_1.pdf

Every year, Turība invests funds to supplement the library's information resources (both for the purchase of literature and for subscriptions to electronic databases). The Turība library is a member of LATABA (Latvian Association of Academic Libraries).

An agreement has been signed with RTU on cooperation in the use of library information resources. The agreement will enable students of the BAT study direction and the study program "Information Technologies" to use the information resources in the collections of the RTU Scientific Library. See the library's working hours in Table 4.

Table 4

BAT library opening hours

Day of the week	Subscription	Reading room
On Mondays	11:00-18:15	00:00-24:00
Tuesdays	10:30-18:15	00:00-24:00
Wednesdays	10:30-18:15	00:00-24:00
Thursdays	11:00-18:15	00:00-24:00
On Fridays	10:00-17:00	00:00-24:00
On Saturdays	10:30-16:00	00:00-24:00
On Sundays	Closed	Closed
First Monday of every month - closed subscription - 1st floor (Spotrības Day).		

For a list of computer science-related books in the BAT library, see Annex 3. Due to the large amount of information, this appendix is included only in the electronic version of the study program "Information Technologies".

2.4.2. Turība University premises, computer labs and IS

BAT is located in Riga, Graudu Street 68, in a local territory with an area of 35,372 m2. At the same time, the university can accommodate 2,756 students in terms of the provision of study facilities. BAT buildings were registered in the Land Register as the property of the university on September 16, 1996. In accordance with the Law of the Saeima of the Republic of Latvia of November 4, 1995, BAT is included in the list of educational facilities of national importance. The university territory includes 2 academic buildings, a student youth and tourism hostel, two canteens and a parking lot.

All necessary conditions have been created for studies – spacious conference halls, auditoriums, computer labs, laboratories and offices, a modern library with a spacious reading

room. The auditoriums are equipped with high-quality visual equipment – whiteboards, overhead projectors and screens, multimedia projectors, audio and video equipment. Lectures are held in spacious conference halls, auditoriums, computer labs, and students have access to a modern library with a spacious reading room. The auditoriums are equipped with high-quality visual equipment – whiteboards, document cameras, screens, multimedia projectors, audio and video equipment. 164 computerized workstations are available to students. 30 multimedia projectors are installed permanently, and 2 portable multimedia projectors are also available. The order in the auditoriums and common rooms is taken care of by the University Service Department, whose employees regularly clean and ventilate the rooms.

Since 2013, a modernized Business Incubator has been operating, where BAT students and graduates can create their own companies. 210 computerized workplaces are available to students. 28 multimedia projectors are installed permanently, and 2 portable multimedia projectors are also available. Free wireless internet (WiFi) is available on the territory of the university. For the convenience of students, a BAT information system (BATIS) has been created, in which every student can follow their progress, see course descriptions and lesson materials, receive the most important information regarding the study process, as well as apply for various certificates and permits electronically.

BAT has its own IT department, which ensures the operation of the IT environment. The technical service ensures the operation of computer equipment and computer network, programmers – the operation and development of BAT's internal IS and BATIS. BAT has 5 (five) computer classes: 34, 30, 30, 28 and 25 student seats + a lecturer's workplace with a projector. Reading room with 30 computers for independent work of students. JTM computer rooms with 16 computers for independent work of students. 25 auditoriums, equipped with a multimedia projector and a computer (excluding small ones, where there is a computer + TV). MS Windows operating system and MS Office on all computers. Computer parameters in classrooms and reading room – Intel 4xcoreI5 / 8GB RAM. All computers are connected to the network with access to the Internet and intranet.

Students and employees have access to Microsoft 365 during their studies or employment. Data storage and user authentication are provided using MS Windows and Novell OES servers. The IS developed by the BAT IT department is used to ensure the study process. BAT subscribes to “MS IT Academy”.

Additional software includes SPSS, Fidelio, Adobe Creative Suite, UVFam – Zalktis, MS Project Horizon. The Moodle environment is used in the e-study process. The library is supported by ALISE software.

In 2022/2023, the computer lab was equipped with new hardware. Including 30 new computers with the following parameters: “HP SFF ProDesk 600 G6 / 12x Intel CPU Core i5-10500 CPU @ 3.10GHz 3190 MHz/ 8GB / 240GB SSD” and 50 new monitors with the following parameters: “LG 24BK55YP-I 24" - 1920 x 1080 Full HD”. Software licenses for “JetBrains Toolbox” have been purchased.

In 2024/2025, a new computer lab is being created and equipped with 30 new computers “Dell OptiPlex SFF 7010 Intel i3-13100 16GB RAM, 1TB SSD” and 30 new monitors with the relevant parameters: “Dell 24" - P2425H, 1920 x 1080 Full HD”. and new hardware, including a laser projector: “NEC PE506UL (WUXGA, 5200Lm)”. In this way, the IT department will be provided with 4 (four) computer labs equipped with all the necessary computer software intended for the study program. The computers in the new computer lab are equipped with AMD video cards intended for several study courses of the study program. Students have access to virtual machines that can be used in several study courses to perform experiments and practical work. You can also connect remotely from any other location using a virtual private network (VPN). opportunities. Various technologies are used in the study courses.

2.5. Organization of the implementation of the study program “Information Technologies” in the form of distance learning

Along with face-to-face studies, the BAT study program "Information Technologies" will also be implemented in a remote manner, while simultaneously providing the material and technical base (laboratory equipment, library, and teaching materials) to the same extent as for other types of studies.

According to with Latvia Education law distance learning is "education" mining shape, in which student education institutions implemented education programs content learns independently individual in a way, using education institutions offered especially structured teaching materials, various technical and electronic means of communication. The student's achievements are appreciated according to the relevant education programs requirements".

Distance learning includes e-learning, but can also be implemented in the form of free studies, including: in a non-formal format using only printed study materials and postal communications. E-study in turn is wider concept than online (online) studies in a computer network, because can to be supplementedalso with to others electronic technologies and lesson types after needs(audioconference, laboratory work, in-person exam, etc.). Both e-study and online studies based to methodological principles of distance learning.

Duration of studies in distance learning is **1 year and 6 months old** or **2 years and 1 month** or **3 years and 1 month**. The distance learning process is divided into the following in stages:

the applicant's entry into the study process - this is done by the study support system - Distance learning department head – Study Department staff, introducing next students with distance learning materials:

- where, when and in which in a way them to receive;
- how with those correctly to work;
- how many is recommended time optimal result to achieve,
- with order, in which happening face-to-face and intermediate consultations with supports system,
- with returnable link - control test sending and calculations and exam sorting,
- evaluation system and order,
- A temporary password is assigned to enter the system, which students change to their first password. once entering the distance learning environment.

studies in mediated contact, i.e., a student's dialogue with the course lecturer through distance learning classes and consultations with the support system (by phone, on the Webex platform or e-mail assistance);

introductory lectures and consultations - in-person consultations are held at the beginning of each study course lecture (students will have consultations once a month in each subject via Webex platform). So how content-wise all studies is summarized distance learning in materials, how also given additionallyliterature sources, then consultations are not mandatory for the student - attending them or not is up to the student student free choice. Consultations is study supports systems component. Those helps for students understand theoretical question compliance each student experience, encouraging to discussions, exchange of ideas. Face-to-face consultations allow the student to become aware of himself in the social environment, experience face-to-face contact with the course leader. They are an additional form of motivation for the student for studies.

For those students, for whom necessary individual consultations, must sign in at Distance learning departments leaders, whose will offer on time at necessary study course lecturers. For students will be opportunity receive consultations from study course lecturers in absentiaalso by phone or email mediation;

Midterm or final exams within each study course - this The exams will be held according to a previously announced schedule, provided that the student has sent required number control test, which were completed successfully.

The internship and receiving an assessment – internship assignments will be posted in a distance learning environment, and the student will be able to familiarize themselves with them. Internships take place in person – BAT provided or student own chosen internships instead (company, organization etc.), where internships driver under supervision student performs internships tasks. Parallel internships for the driver internshipsexit instead for a student is opportunity to consult also at subroutines driver. In conclusion each student presents their internship report in an open "Internship Report Defense", answering to BAT internships driver and the rest student questions, at the end individually receiving comments and evaluation for what has been done face-to-face work defense in time;

Master's thesis development and defense - master's thesis leader can to be both BAT recommended teaching strength, both student own chosen specialist. After to that, when work topicis approved at work driver, so mandatory is to be confirmed by the director of the study program. The development of the master's thesis takes place independently in mediated contact with the thesis supervisor. The thesis defense takes place in person BAT at created commissions.

By examining the implementation of the distance learning process in stages, it is possible to clearly distinguish the study process activities in person, as also indirectly in contact.

2.5.1. Study process activities developments shape

Activity	Activities developments shape	
	In person	**Indirect in contact**
Reflectant introduction to study process	Dating with BAT - with administration, studies, teachers, study process, internalorder.	Sending training materials electronically (repeatedly to new teaching semester beginning).
Educational materialacquisition	• introductory lectures (group works,practical tasks, discussions, seminars). • consultations	Distance learning lessons (incl. tasks andtests for self-control). Consultations with study course for managers(by phone) email mediation)
Tests	• intermediate tests • final exam study coursein conclusion	Control tests – with study systems the student takes the test through teachers carry out control, the student receives assessment.

Internships	Internships task execution according to withInternships regulations. Consultation with internships driver. Internships in written form must be submitted in college, after inspections –internships defense.	Internships task receipt electronically or by mail. Consultations with internships driver (student agrees with the teacher about consultations type and time). Internships reports sending for a student after inspections (recommendation, corrections, rating).
Master's thesis	• work topics choice and approval • Consultation at work driver (by agreement of times, but not less than4 times). • defense of work	Choosing a topic for the work and approval (with e-mail through or BATHS on the website). Work defense online/in person.

2.5.2. Distance learning quality provision

Distance learning basically is independent studies, therefore large meaning is teaching funds methodological quality.

Each distance learning course is divided into parts. At the end of each part there is a test and course at the end exam. Individual study process supports Study parts employees and Distance learning departments leader, IT specialist. Consultations can receive directly or using communicationfunds (mail, phone, Moodle system, WhatsApp, email, etc.).

I. Teaching course goals and results

1. Each course of study has a clearly stated goal that a student can hope to achieve upon successful completion. that upon completion. Course content is sufficient to to achieve the course goal goals.
2. The course result can be achieved through distance learning studies, which also include face-to-face classes (after student optional).

II. Teaching course content

Each study course material is created so, so that would promote individual studies.

Requirements study for material:

1. appropriate and good structured content presentation;
2. carefully developed study gait;
3. division in parts, in departments and in classes;
4. consecutive explanation, new material acquisition based to previous materialknowledge;
5. various approach application, including summaries, visual examples and illustrative material, which highlights individual concepts accordingly;
6. regular opportunities for self-examination;

7. clear instruction, what helps for the student to navigate teaching in the material.

To to ensure qualitative study support was developed quality provision system:

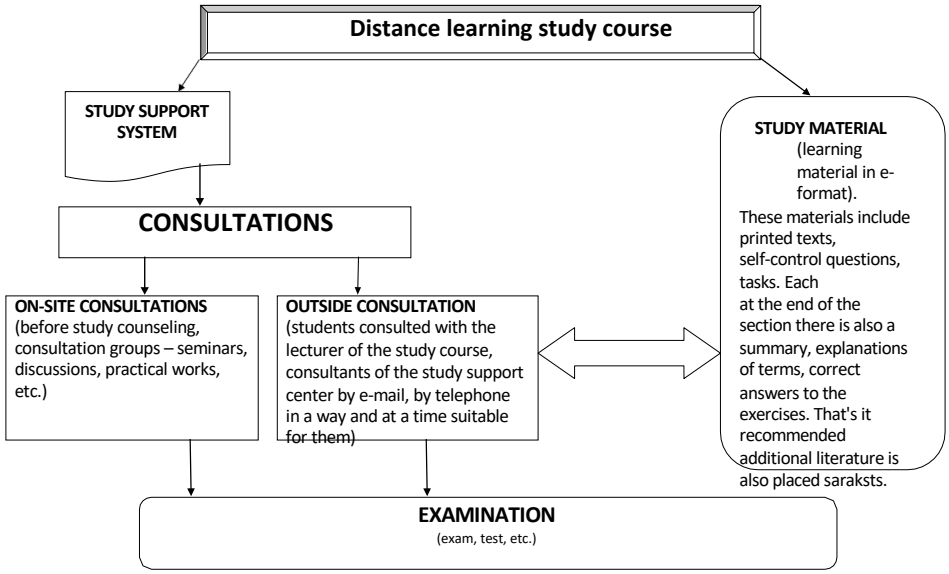
1. determine appropriate teachers relevant study for the course;
2. to follow teacher professional compliance;
3. to do the new teacher training accordingly distance learning specific work requirements;
4. determine deadlines for answers to questions, test for correction, marks for putting andassessment for notification for the student, or course material for review;
5. once every six months to provide an opportunity teachers, employees and students to evaluate study course materials, with the aim of improving it quality;
6. attract experts relevant in the industry study material for evaluation;
7. to evaluate results and them use further work for improvement.

Student progress will be regularly controlled, and students about that on time informed providing, encouragements and useful advice in relation to course goals achievement. It especially,for example, if:

- if student late test paper submission deadline or submitted unsatisfactorywork, The teacher will contact you immediately. with student.
- special study support and encouragement will be provided to students who have submitted unsatisfactory work. That interrupt only then, when all real opportunities to help exhausted.

2.5.3. Distance learning study structure

Incomplete time studies (distance learning) study program for learning is available*Moodle* online learning platform, which provides access to course materials, assignments, practical examples, videos materials, current tests and exams.



3. STUDY CONTENT AND IMPLEMENTATION MECHANISM

3.1. Description of the content of the study program

The content of the study program "Information Technologies" has been developed in accordance with **the ACM**[6] (*Association of Computing Machinery standards, i.e. Curriculum Guidelines for Graduate Degree Programs in Computer Science*), **CDIO Standard 3.0**[7] (*Conceiving, Designing, Implementing, Operating*) innovative education framework, training a new generation of engineers, i.e. from product conception, design, implementation to its operation, as well as the professional standard of a leading programming engineer. When admitting students to the program, previously acquired education is evaluated and, in accordance with the BAT equivalence rules, an individual study plan is created that fits into the overall study program.

The relevance of the study program courses is based on industry trends, which is heard from leading IT companies and is observed in the market demand for programmers. As already mentioned, this information is obtained from cooperation partners, which are IT companies and determine industry trends. As an example, we can mention "Accenture Latvia" continuous "BootCamp" (https://bootcamp.accenture.lv) activities, which are provided at least 3 times a year with "Java/Software engineering", which are always filled and consist of at least 25 participants. After such activities, most are offered internships, which are paid and the student is able to earn a salary. Also, one of the other indications is the www.CV.lv portal, which is the No. 1 job advertisement portal in Latvia. Looking at this portal, you can observe a trend that programmers are needed in the IT sphere on average ~400 vacancies. If compared with "Finance / Accounting" and "Banking / Insurance", this is approximately two times less. By delving into the relevant sector, we can see the distribution that in the IT sector, ~60 vacancies are required in the "Java" programming language. Further speculating with this data, we can say that ~15% of all IT vacancies require knowledge of the "Java" programming language. It should also be noted that the "Information Technologies" study program also provides for other programming languages such as "C#" and "Python". We can also view them on this portal and see that ".NET", which is a platform that provides the "C#" programming language, reflects ~100 vacancies in the portal search results. Since the "Python" programming language is mentioned, its result is ~30 vacancies. With the help of good analysis, we can count a total of 60 + 100 + 30, which makes up ~190 vacancies out of ~400, which makes up ~47.5% of all vacancies in the IT sphere. Based on this data, it can be stated that the study program "Information Technologies" is relevant in accordance with industry trends.

The interconnection of the study courses of the study program ensures gradual and systematic mastering of study courses. The study program is created in 3 different variants, where:

Option 1 is intended for IT specialists who have mastered the previous first-cycle professional higher education study program in Information Technologies, Computer Systems or an equivalent study program, where they have obtained the qualification of a programming engineer or systems analyst or an equivalent qualification. Full-time studies are carried out in study courses, see the study program forms with a detailed description and division into parts A, B and C. Obtaining the qualification **of a Leading Programming Engineer**.

Option 2 is intended for IT specialists who have completed a previous academic bachelor's degree program in Information Technology, Computer Systems, or an equivalent study program. Obtaining the qualification **of a Leading Programming Engineer**.

[6]https://www.acm.org/education/curricula-recommendations
[7]https://cdio.org/content/cdio-standards-30

Option 3 is intended for students who are not IT specialists and have obtained a bachelor's degree in another field. In order to acquire the necessary study courses and acquire the necessary skills, competencies and knowledge, an additional academic year with study courses is added to acquire the necessary knowledge in basic IT knowledge. Obtaining the qualification **of Systems Analyst**.

3.1.1. Planning of the study program “Information Technologies”

of the second-cycle professional higher education study program "Information Technologies", see Annex 5.

3.1.2. Study descriptions

For detailed course descriptions, see Annex 6 and Annex 7.

3.1.3. Study course mapping

Additionally, we add a description and assessment of the study course mapping, the methodology used in its creation, the purpose of the mapping (for example, mapping the results of study courses/modules against the results of the study program, showing how the results of a separate course/module contribute to the achievement of the results of the study program, etc.). The study course mapping, according to knowledge topic groups, where it is shown:

- knowledge topic groups;
- designation of knowledge topic groups;
- the relevant years and semesters of study;
- study course codes.

Mapping of study courses according to knowledge topic groups. For a detailed mapping of study courses, see Annex 8.

3.2. Study program implementation mechanism

3.2.1. Admission requirements for the study program “Information Technology”

The study program "Information Technologies" can be applied for by persons with a LKI level 6 higher education qualification (bachelor's professional, bachelor's or professional higher education qualification) in the same or a related scientific field or professional field, as well as a certain type of professional experience determined by the higher education institution.

3.2.2. Forms of learning the study program "Information Technologies"

The study program is taught through lectures, seminars, discussions, "Hackathons", video and audio, research projects, consultations with lecturers and scientific research supervisors involved in the implementation of the program, as well as independent studies.

The form of study implementation is determined by modern approaches to teaching learning material (cognitive approach, research approach, problem-solving approach, autonomous studies) and methods (general study methods, analysis and compilation of scientific information, information collection, systematization, presentations). The methods used in the study process promote the acquisition of theoretical knowledge, develop creative and logical thinking, the ability to communicate and discuss, and argue one's opinion, skills and abilities to use active learning methods, as well as analyze and compile information.

Taking into account the above-mentioned means of acquiring theory, students also have the opportunity to implement their skills, gain knowledge and experience in seminars, discussions and research projects. Also, taking into account that the student contingent is

diverse, students have the opportunity to receive advice from BAT lecturers both during consultations and during personalized meetings, by prior agreement with the lecturer himself.

Discussion during lectures is essential, not only to involve students in the learning process, but also to encourage students to express their own vision of possible solutions to problems. Discussion also allows the lecturer to assess how much the student has understood the topic and what nuances need to be repeated or explained further.

One of the essential study methods is the preparation and presentation of presentations, thus training students to express their opinions and arguments, while at the same time developing the students' ability to structure their work to explain its meaning, significance and added value. The preparation and presentation of presentations also helps students to repeat and memorize the knowledge that students have used in preparing their work, while also identifying mistakes made, because the presentation provides an opportunity to look at their own work from the outside, which is an important method for identifying their own mistakes.

Analysis of student work and pragmatic discussion of what has been accomplished, as well as the opportunity for other students to express reasoned opinions about what has been accomplished and the lecturer's involvement in the role of mediator for the students, promote objective discussion and understanding both among the students and between the students and the lecturer.

In cases where a student believes that the study process has been inadequate, theoretically unfounded, or otherwise inconsistent with the interests of the student and the commitments undertaken by BAT, the student has the right to contact the faculty management both in person and remotely, as well as by posting an application/complaint in the freely accessible faculty correspondence area.

The study regulations contain a statement that the higher education institution or college guarantees compensation for losses to students if the study program is not accredited due to the actions (actions or inaction) of the higher education institution or college or if the study program license is revoked and the student does not wish to continue studies in another study program.

Examination forms for the study program "Information Technologies"

The tests assess students' knowledge, skills, and competencies, which are determined in the study program and in each individual study course.

The main forms of assessment during the study programme are regular examinations and final examinations – exams. The form of assessment of research projects and scientific discussion seminars and the developed diploma thesis is a public defence.

Regular examinations are examinations organized during the course of study. They are organized and conducted by the lecturer of the course. The number and topics of regular examinations are indicated in the course description. Each regular examination may include several types.

An exam is a test that assesses the knowledge, skills and competencies acquired by a student in a given study course. The exam is administered by the course lecturer or another lecturer assigned by the head of the department.

Final examinations of the academic year are examinations that conclude the current academic year's program. The types of final examinations of the academic year, except for the last academic year of the study program, are: defense of the internship report; defense of the study paper.

The final examination is the examination that concludes the acquisition of a study programme. The acquisition of a study programme concludes with a state examination. The state examination is regulated by the State Examination Regulations[8].

[8]Documents will be available during the visit with BAT-issued access to the internal network

3.2.4. Organization of the study program “Information Technologies”

Table 5

Organization of the study program "Information Technologies"

Address of the place of implementation of the study programs corresponding to the field of study, type and form of studies	of the second-cycle professional higher education study program "Information Technologies": Graudu Street 68, Riga, Type and form of studies: **full-time face-to-face studies, part-time distance learning.**
Structural and logical scheme of the study program	The BATIS electronic folder contains the program in tabular form next to the study program description.
Study program courses and their descriptions	In the BATIS electronic folder next to the study program description.
Study implementation schedules	Placed in the electronic folder next to the study program description.
Departments involved in the implementation of the program	Faculty of IT (ITF) and ITF Department.
Assessment system (educational criteria and assessment methods for achieving and assessing study results, examination forms and procedures):	Seminars, as a teaching method, are used in subjects in which the student has a greater opportunity to conduct independent research. During seminars, the student has the opportunity to present his or her opinion, as well as defend it. Group work, as a teaching method, is used in subjects in which team work is necessary to understand the essence of the theory. During the acquisition of each study course, the student must pass the regular examinations specified in the study course program – tests and/or independent study works. The basic form of assessment of the acquisition of the study program is an exam, which must be taken at the end of each study course. Only students who have fulfilled all the requirements specified in the study course description (have passed all regular examinations), have fulfilled the obligations specified in the contract for obtaining education, and have defended the internship report and study work of the previous study year are admitted to the final examination of the study course. The form of the examination is specified in the study course programs. In the exam, the acquisition of the study program is assessed with a mark on a 10-point assessment scale in accordance with the regulations of the Cabinet of Ministers.

Study facilities	All necessary conditions have been created for studies – new conference rooms, auditoriums, computer labs, a modern library with a spacious reading room, etc. The material and technical base of studies allows us to fully provide the necessary conditions for mastering the study courses of the study program: • each study room has a multimedia projector and a computer; • There are interactive whiteboards in the conference rooms; • computer labs are equipped with the necessary software for the 1st year of study; • Students have the opportunity to copy their work and attend computer classes.

3.2.5. Degree and qualification awarded by the study programme

Degree and qualification to be obtained – **second cycle professional higher education degree** and **qualification of systems analyst or leading programming engineer,** level of qualification obtained: level 7 of the European Qualifications Framework (EQF) and the Latvian Qualifications Framework (LQF); level 7 of Latvian professional qualifications.

Option 1: Degree and qualification to be obtained – second-cycle professional higher education degree and qualification of a leading programming engineer.

Option 2: Degree and qualification to be obtained – second-cycle professional higher education degree and qualification of a leading programming engineer.

Option 3: Degree and qualification to be obtained – second-cycle professional higher education degree and qualification as a systems analyst.

Second-cycle professional higher education and the qualification of a leading programming engineer or systems analyst provide graduates with career opportunities in Information Technology companies or IT departments of other organizations.

The degree is awarded upon fulfilling all the requirements of the study program, completing an internship, defending a study work, independently developing and publicly defending a master's thesis under the guidance of an experienced scientific supervisor, which contains the results of original research (experiments) and provides new knowledge in computer science. The topic of the master's thesis is approved by the Council of the IT Faculty. The master's thesis is checked in a computerized plagiarism control system and a reviewer is appointed to review it. A State Qualification Commission is established for the public defense of the master's thesis, which consists of no less than 50% representatives of employer organizations. The work of the commission is headed by its chairman, who represents an employer organization or another higher education institution.

See Appendix 9 for a sample diploma.

3.3. Characteristics and analysis of student internship provision

Students of the study program "Information Technologies" undergo an internship in a company. The internship ensures that theoretical knowledge and skills acquired in laboratories and practicals are combined and a set of competence-based practical skills is formed, which is necessary for a career as a leading engineer, programmer or systems analyst.

The amount of credit points (ECTS) for study practice in accordance with the study plan of the Study Program " Information Technologies" is determined as follows:

- Full-time face-to-face studies (1 year and 6 months) - 9 credit points, 30 credit points are obtained from the acquired professional bachelor's degree;
- Part-time distance learning studies (1 year and 6 months) - 9 credit points, 30 credit points are obtained from the acquired professional bachelor's degree;
- Full-time face-to-face studies (2 years) - 9 credit points, 30 credit points are obtained through an individual plan;
- Part-time distance learning studies (2 years and 1 month) - 9 credit points, 30 credit points obtained through an individual plan;
- Full-time, face-to-face studies (3 years) - 39 credit points;
- Part-time distance learning studies (3 years and 1 month) - 39 credit points.

Study habits are an important and integral part of the study process, helping to consolidate and improve the knowledge gained during studies, as well as providing the student with the opportunity to get to know a potential employer in good time and strengthen their confidence that they have chosen the right study program.

The objectives of the internship according to the study program are as follows:

To consolidate the theoretical knowledge gained during studies;
Gain experience in using theoretical knowledge when solving various work tasks;
Gain the ability to solve various non-standard situations with theoretically based methods;
Get to know the potential industry and identify what additional theoretical knowledge needs to be acquired in order to fully function in the chosen industry in the future;
To gain confidence that the student has chosen a specialty according to his/her abilities and thus motivate him/her to engage more actively and qualitatively in the study process;
To provide understanding and confidence that good theoretical knowledge is important for performing quality work and that it facilitates the work to be done and promotes good results.

During the internship, the student works in a company and participates in company projects. During the internship, the student acquires the skills to develop a program or software system and prepare reports in accordance with the rules for preparing project documentation, as well as to publicly defend the results obtained.

Independent work, its organization and tasks:

- The internship assignment, which specifies the activities to be performed and deadlines, is formulated by the internship manager in the company.
- The study course is completed independently, regularly consulting with the internship manager at the company, the internship coordinator at the university, and following the instructions of the structural unit for monitoring the progress of the report development.

Achievable internship results:

- Able to design and build user interfaces, construct and describe algorithms, write program code, debug programs, perform unit testing, and prepare documents.
- Able to present and explain achieved results in a reasoned manner, and discuss them.
- Strengthen theoretical knowledge about the development, implementation and maintenance process of software and/or other ICT solutions in accordance with technical documentation and process plan.
- Identify and understand the work assignment, its associated risks and quality requirements.
- Choose a complex program, program development tools, and programming language according to technical documentation.
- Collect, test, and analyze software development work results or deliverables.
- Explore the possibilities of the latest technologies and develop effective solutions to meet needs in collaboration with technology suppliers.
- To compile data, information and materials for a master's thesis.

Methods of evaluating results.

1. A familiarization and qualification internship has been completed, for which positive evaluations have been received from the internship manager at the company, the internship coordinator, and the internship evaluation committee.
2. Publicly defended practice report.

Companies whose core business or support solutions are related to software development are selected as potential internship companies: coding, design, software maintenance, implementation and testing, requirements testing, system analysis, user documentation preparation, and software project planning.

See Appendix 10 for the internship regulations.

3.4. Assessment of how the quality assurance system established at the university/college

BAT Quality Policy is a part of BAT quality management system, which sets general guidelines. To provide modern multi-level education and to be a competitive, dynamic and profitable higher education institution in the long term. In cooperation with industry and employer organizations, to offer study programs that meet the requirements of the labor market, are in demand and are recognized by the state. To ensure the ability of graduates to confidently compete in business and the labor market.

Core value – highly qualified, competent, progressive, socially recognizable and recognized academic staff and professional administrative employees. To promote the study process with a high-level, modern material and technical base, modern infrastructure and a comfortable, safe and tidy environment. To provide a wide range of educational and scientific literature and study methodological materials. To base our activities on continuous improvement, as well as the principles of excellent business and quality management systems, satisfying customer expectations and gaining their trust. Quality assurance activities are described in detail in the BAT Quality Manual, which includes a wide range of documents (policies, regulations, procedures, forms, etc.) that determine BAT priorities, describe how quality assurance is implemented, how data is collected and analyzed, how employees and other stakeholders are involved, and corrective and preventive actions are planned and carried out for continuous quality improvement.

The quality policy is based on the strategic guidelines of BAT, which define the vision, mission and values of BAT, as well as include specific BAT goals and objectives for a certain period of time. Indicators for task performance control are also added here, which are regularly monitored. The quality policy is also based on the following basic principles, which define the priorities of the university in order to develop its competitiveness, ensure the competitiveness of employees, as well as ensure a high-quality, nationally recognized study process at the university that meets the requirements of the labor market. To ensure these basic principles, BAT adheres to the following priorities in its activities:

- customer (both internal and external), which includes regular measurement of customer satisfaction (students, trainees, graduates, employees, employers);
- high-quality service offering;
- continuous process improvement to ensure process efficiency, effectiveness and flexibility, which allows for the most complete satisfaction of customer needs;
- professional and personal growth.

Guided by the vision and mission defined by BAT, the following aspects are evaluated in the quality policy to achieve them:

- the wishes and needs of current students;
- graduates' wishes and needs;
- lecturers' knowledge and skills in the professional field;

- examples of excellent performance in leading European universities.

A significant role in ensuring quality at BAT is played by collegial institutions, in which employers and students are also actively involved. The powers and activities of these institutions are described in the Regulations of the Councilors' Convention, the Regulations of the Development Council, the Regulations of the Rector's Council, as well as the Regulations of the Faculties, which also include the involvement of the Faculty Councils in ensuring the quality of studies, scientific research and methodological activities. The results of the activities of BAT collegial institutions are reflected in the protocols.

The qualitative indicators of the program implementation are measured using various instruments, statistical indicators are selected from the internal data system of the university, such as the number of matriculated, students, graduates and students. Using surveys of various target audiences, etc., information is obtained about the level of satisfaction of students, employers, graduates and employees, the level of pedagogical performance, the parameters of the professional career of graduates, such as, for example, remuneration, career growth, etc.).

The dynamics of these qualitative data results are analyzed both at the management level and within each structural unit, thus ensuring prompt and adequate decision-making regarding the necessary actions to be taken to ensure an increase or maintenance of the overall quality of the service and the level of customer satisfaction.

To ensure internal quality, the following principles are followed:

- senior management's interest in achieving the required quality level;
- focusing the university's activities on students, graduates and staff;
- conscious participation of personnel in quality improvement and continuous improvement;
- involvement of academic staff in scientific activities;
- process approach – process management based on facts about the activity;
- making fact-based decisions.

The internal quality assurance of study programmes is based on:

- analysis and comparison of study programs both at the Latvian and international levels;
- evaluation of lecturers;
- ensuring scientific activities;
- regular identification and analysis of the opinions of students, graduates, employees and cooperating institutions;
- careful financial and resource planning at all levels of management.

For continuous quality improvement, BAT actively uses surveys, the objectives, implementation, data analysis and further use of which are described in the Survey Procedure. The surveys include both the assessment of the study process and the professional performance of the lecturer, the study environment, the compliance of study programmes with the labour market requirements, and the assessment of employee satisfaction. The surveys cover the assessment of the opinions of students, graduates, employers and employees. BAT also collects, compiles and analyses information contained in student applications, as well as written and verbal complaints (Procedure for reviewing student applications received at the Study Information Centre, Progress of documents received at the Secretariat, Procedure for accepting and reviewing complaints). BAT regularly conducts internal audits of the quality management system, the role and implementation process of which are described in the Internal Audit Regulations of the Quality Management System, and the results are reflected in audit reports.

Quality control is implemented by organizing internal quality management system audits of the company to assess whether the activities of BAT structural units and the processes performed comply with the company's mission, vision and defined goals, as well as to control

the compliance of processes and activities performed by structural units with regulatory documents and assess the effectiveness of the activities performed.

Information on the compliance of the study programme's quality assurance system with Part 1 of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESA) is available in Appendix 11. For the compliance of the study programme with Part 1 of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESA), see Appendix 11.

The evaluation, improvement, promotion and motivation of BAT employees' work quality are carried out both with the help of the above-mentioned surveys, and with the help of the Personnel Policy, Ethics Policy, Class Observation Procedure, Scientific Research Work Regulations, Regulations on the Procedure for Payment of Consultative Services and Projects for Employees of the Turība, the academic and scientific work plan of the faculties, the individual work plans included in the regulations on the organization of remuneration of the University's personnel, etc.

The improvement of the material and technical base and infrastructure is implemented in accordance with the Procedure for Performing Economic Works and Repairs, the Procedure for Inspecting Buildings and Equipment and Performing Preventive Repairs, the Planning of Repairs and IT Technology Improvements, and using data from student and employee surveys.

The process of continuous replenishment and improvement of the BAT Library Fund is described in the Library Fund Formation Procedure and is implemented by involving program directors, department heads and lecturers, as well as BAT Publishing House and

Daily improvement activities are ensured through regular weekly meetings of managers, management meetings (Management Meeting Regulations), and Rector's Council meetings (Rector's Council Regulations). The results of the management meeting and Rector's Council meetings are reflected in the minutes.

The set of all measures ensures a continuous quality improvement cycle at BAT. The BAT Quality Manual is periodically evaluated and revised (Procedure for the Development and Updating of Normative Documents). BAT employees have access to BAT internal regulatory documents, documents of the educational process and its organization (internal regulatory acts describing the structure, functions and responsibilities of BAT, regulatory documents regulating the educational process, descriptions of various procedures, descriptions of curricula and training courses, conference materials and other documents that are necessary for both ensuring daily administrative functions and the educational process. The regulatory document “Documents binding on students published on the Internet and in the student information system BATIS” approved by the BAT Senate lists BAT regulatory documents that are published for students in BATIS and are available on the BAT website. BAT Quality Policy is published both in the student information system BATIS and on the website www.turiba.lv under regulatory documents (http://nodarbibas.turiba.lv/regdok.asp).

3.4.1. Compliance of the second-cycle professional higher education study program "Information Technologies" with legal acts

The study program "Information Technologies" is organized in accordance with the following legal acts:

1. Law on Higher Education Institutions.
2. Education law.
3. Vocational Education Law.
4. Cabinet of Ministers Regulations No. 305 “Regulations on the State Professional Higher Education Standard”.
5. Cabinet of Ministers Regulation No. 264 “Regulations on the Classification of Occupations, Basic Tasks Corresponding to Occupations and Basic Qualification

Requirements". As well as the Systems Analyst occupation code (2511 02) and Leading Software Engineer (NACE 62.01).
6. Cabinet of Ministers Regulation No. 795 "Regulations on Licensing of Study Programs".
7. Cabinet of Ministers Regulation No. 793 "Regulations on the Opening and Accreditation of Study Fields".
8. Cabinet of Ministers Regulation No. 322 "Regulations on the Classification of Latvian Education".

3.4.2. Compliance of the study program with the national education standard

The study program "Information Technologies" complies with the following state education standard: Cabinet of Ministers Regulation No. 305 "Regulations on the State Professional Higher Education Standard" https://likumi.lv/ta/id/342818-noteikumi-par-valsts-profesionalas-augstakas-izglitibas-standartu. For a comparison of the state professional higher education standards of the second cycle of professional higher education and the study program "Information Technologies", see Annex 12, 13 and 14.

3.5. Evaluation of involvement in the development of the study program

Students, graduates, employers and industry employers' organizations are involved in the creation of study programs from the moment of the idea to its implementation. Students are invited to ITF Council meetings, where the issue of the possibility of introducing a new study program at ITF is raised, where the opinions of students, graduates, employers and industry employers' organizations are heard. Students make up 20% of the entire ITF Council, graduates are freely invited to join and share industry trends. Employers are involved in ITF Council meetings and participate in the creation of new study programs by offering study courses, internship opportunities for students and technological experience in the IT industry. LIKTA also participates in the creation of the study program, delegating a representative to the ITF Council, who participates and shares their experience. We successfully obtain guest lectures from the industry, where students get acquainted with the latest trends, which, after evaluating, are also recommended to the ITF Council. See the attached employer contract confirmations on the provision of student internships. The study program is planned to be implemented in the form of distance learning, see the distance learning section for meeting the criteria. The study program is planned to be implemented in the Latvian language, see the annexes for meeting the requirements.

4. TEACHING STAFF

4.1. Justification for the selection of teaching staff to be involved in the implementation of the study program

BAT has determined the following areas of activity in the field of ensuring and improving the quality of higher education, which are included in the study program "Information Technologies":

Academic staff recruitment:

- to create an academic environment that meets the requirements of higher education, to recruit scientific and academic staff in accordance with the procedure established by BAT, as well as to organize their qualification improvement;
- to promote the loyalty of academic staff and employees by motivating them to improve the quality of their work by presenting awards, expressing appreciation, organizing various social and cultural events and, to the extent possible, providing material incentives.

Cooperation with other universities:

- to develop cooperation with foreign universities in order to conclude cooperation agreements on the creation of joint study programs and cooperation in the field of scientific research;
- regularly analyze study processes related to the ICT sector in the context of the achievements of other universities, and seek opportunities to improve the quality of studies;
- regularly invite guest lecturers;
- regularly use lectures by visiting professors and webinars to inform students about computer science in the world and the EU, and to expand competencies on an international scale;
- cooperation with other Latvian universities;
- to stimulate student cooperation with secondary schools.

Academic staff and student mobility:

- develop cooperation with other universities, including those outside Latvia, by agreeing on opportunities for student and lecturer exchange;
- to stimulate lecturers and students to participate in the Erasmus program by giving lectures, and the participation of one lecturer in the Erasmus program experience exchange.

Information technology, computer engineering, electronics, telecommunications, computer management and computer science direction statistical data on incoming and outgoing mobility of teaching staff. Incoming mobility 2019/2020 - 1; 2023/2024 - 1 and outgoing mobility 2021/2022 - 3; 2023/2024 - 3.

Number of foreign visiting lecturers (incoming) 2019/2020 - 1; 2023/2024 - 1.

To achieve the goals of the study program, Associate Professor Jānis Pekša with a Ph.D. degree and 20 years of work experience in the IT industry is being recruited for the subject Enterprise Resource Planning Systems, Assistant Professor with a Ph.D. degree and 25 years of work experience in the IT industry is being recruited for the subject Information Systems Analysis, Modeling and Design, Associate Professor Soledad Le Clainche with a Ph.D. degree and 20 years of work experience in the IT industry is being recruited for the subject Software Engineering, etc.

4.2. Compliance of teaching staff qualifications with the requirements set by regulatory enactments

The composition of the teaching staff is formed in accordance with the provisions of Article 26 of the Education Law, providing for the election of teaching staff to positions in accordance with their qualifications. Also, guest lecturers and lecturer assistants are involved in the training process, whose knowledge and qualifications correspond to the achievement of the study program goals, but this staff is not elected and carries out the training process in accordance with the instructions of the elected teaching staff. The table below shows the qualifications of the teaching staff, the subject taught and a description of the specific knowledge that they can provide to achieve the study goals.

The Curriculum Vitae Europass of teaching staff can be viewed in Annex 15, where you can view the compliance of the qualification with the requirements set by regulatory enactments that correspond to the achievement of the results of the study program.

The total number of teaching staff involved in the study program "Information Technologies" is 16, of which:

- 2 professors with doctoral degrees;
- 3 visiting professors with doctoral degrees;
- 1 associate professor with a doctorate;
- 1 visiting associate professor with a doctorate;
- 2 visiting ass. prof. with a doctorate degree;
- 1 assistant professor with a doctoral degree;
- 3 lecturers with a master's degree;
- 3 guest lecturers with master's degrees.

Compliance of teaching staff qualifications with the requirements set by regulatory enactments. Analyzing the compliance of the qualifications of professors, visiting profs., assoc. profs., visiting profs., etc. teaching staff to achieve the results of the study program, there is excellent skills, competencies, abilities and many years of experience in the IT sector. Two of them are **IT experts of the Latvian Academy of Sciences**[9].

4.3. Describe the mechanisms and procedures applied by the university/college to improve the qualifications of teaching staff

The teaching staff is involved in the implementation of the study program with the following research directions, which are related to specific study program specifics and appear in the teaching staff's professional experience in the IT sector:

- Prof. Rosita Zvirgzdina study course Entrepreneurship Financing has been providing professional study courses to IT students for more than 5 years - Scientific articles are written on the specific topic of the study course;
- Sundars Vaidasvarans has been teaching the Civil and Environmental Protection course for more than 15 years;
- Assoc. Prof. Jānis Pekša is the inventor and patent holder of the study course Brain-Computer Interface, as well as, for more than 10 years, teaching the study course Enterprise Resource Planning Systems, where the obtained doctoral degree is related to the study course - Scientific articles are written on the specific topic of the study course;
- Antons Kolodinskis has worked as a developer for over 10 years in the Advanced Programming (JavaScript, C#, Python) study course integrating best practices;

[9] https://www.lza.lv/

- Prof. Dmytro Mamchur has been leading the Introduction to Computer Architecture, Software Engineering, and Computer Systems study course for over 15 years - Scientific articles are written on the specific topic of the study course ;
- Jānis Ozoliņš teaches the Database Management Systems course with over 20 years of experience in database technologies;
- Maksims Žigunovs dedicates his doctoral thesis to the study course GPU Programming, where students are involved in writing scientific papers and in the World Cup of Game Development Championships - Scientific papers are written on the specific topic of the study course;
- Assoc. Prof. Inese Poļaka has been leading the Machine Learning and Intelligent Analytics study course for more than 10 years - Scientific articles are written on the specific topic of the study course;
- Jenson Goh is internationally recognized as an experienced lecturer at several universities and leads the Information Systems Analysis, Modeling and Design study course from his 30 years of experience - Scientific articles are written on the specific topic of the study course;
- Mārtiņš Leitass study course Software Development and IT Operations (DevOps) practically shows an experienced story from the prism of Latvia, the USA, and Europe, which has already been around for 20 years;
- Prof. Anita Jansone has been leading the IT Project Management study course for more than 35 years - Scientific articles are written on the specific topic of the study course;
- Anna Zabolotska leads the IT Project Management study course as an experienced practitioner with 25 years of experience in the IT industry;
- Assoc. Prof. Tereza Otčenášková leads the study course IT Research Seminar based on her experience at the university for 15 years - Scientific articles are written on the specific topic of the study course;
- Assoc. Prof. Torben Ægidius Mogensen leads the study course Web Service Solution Development (study project) based on his own experience at the university, which is already 35 years old - Scientific articles are written on the specific topic of the study course;
- Assoc. Prof. Soledad Le Clainche has been leading the Software Engineering study course for 15 years - Scientific articles are written on the specific topic of the study course;
- Assoc. Prof. Maja Pušnik leads the Composite Applications study course based on her own experience - Scientific articles are written on the specific topic of the study course.

Mechanisms and procedures for improving the qualifications of teaching staff and promoting scientific research activities:

- a stimulation of scientific activities of academic staff;
- to develop scientific research work, conduct scientific studies, develop monographs, textbooks and study aids;
- to develop scientific research by stimulating lecturers and coordinating their activities in the preparation of monographs, textbooks and other scientific publications, with special emphasis on scientific publications in international citation databases (Web of Science and SCOPUS);
- to provide payment for the translation of internationally recognized publications into English;
- to coordinate the activities of the faculty's academic staff in order to develop joint scientific research of lecturers and students;

- to coordinate work to develop the evaluation of students' scientific research results at student scientific conferences, to develop doctoral student scientific conferences;
- to direct the best independent research developed by students towards publication.

For a list of all teaching staff involved in the implementation of the study programme, see Annex 16.

For a list of scientific publications of the teaching staff in peer-reviewed journals or a list of research or artistic achievements related to the study program in the last six years, see Annex 17.

5. LIST OF ATTACHMENTS

1. ANNEX
Comparison with other university college study programs.

2. ANNEX
Employers' letters of intent regarding the provision of internships for students.

3. ANNEX
List of computer science-related books in the BAT library.

4. ANNEX
Turība annual report, audited financial year 2022/2023.

5. ANNEX
Contents of the second-cycle professional higher education study program "Information Technologies".

6. ANNEX
Information that must be included in the descriptions of study course modules.

7. ANNEX
Study program Information Technology study plan

8. ANNEX
Study course mapping

9. ANNEX
Diploma sample Information Technology

10. ANNEX
internship regulations

11. ANNEX
Compliance of the study programme with Part 1 of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)

12. ANNEX
Compliance of the study program with regulatory requirements

13. ANNEX
Compliance of the study program with the national professional higher education standard

14. ANNEX
Compliance of the study program with the professional standard

15. ANNEX
Creative and scientific biographies of teaching staff involved in the implementation of the study program (Curriculum Vitae in Europass format)

16. ANNEX
List of teaching staff involved in the implementation of the study program

17. ANNEX
The most significant publications of the teaching staff involved in the implementation of the Information Technology study program

18. ANNEX
Academic Staff Election Regulations

19. ANNEX
Decision of the Senate Council of the Higher Education Institution on the establishment of a study program